

**GRAPHICS ON THE AMIGA**

California's Computer Magazine

OCT. 1987 • ISSUE 36

**FREE**

# MICROTIMES™

**Wendy Woods' Newsbytes™**

**Dennis Eversole and Kazuo Ishiguro of Toshiba**

**Dvorak's Last Column**  
By John C. Dvorak

**Jan Lewis On Commodore's Future**

## **TOSHIBA IN AMERICA**

**The Best Of Times,  
The Worst Of Times**

**SPECIAL SECTION**

## **MAC AT WORK**

► **Macintosh II Reviewed** ► **PowerPoint Presentations**



# How to tell the difference between DESQview™ 2.0 and any other environment.

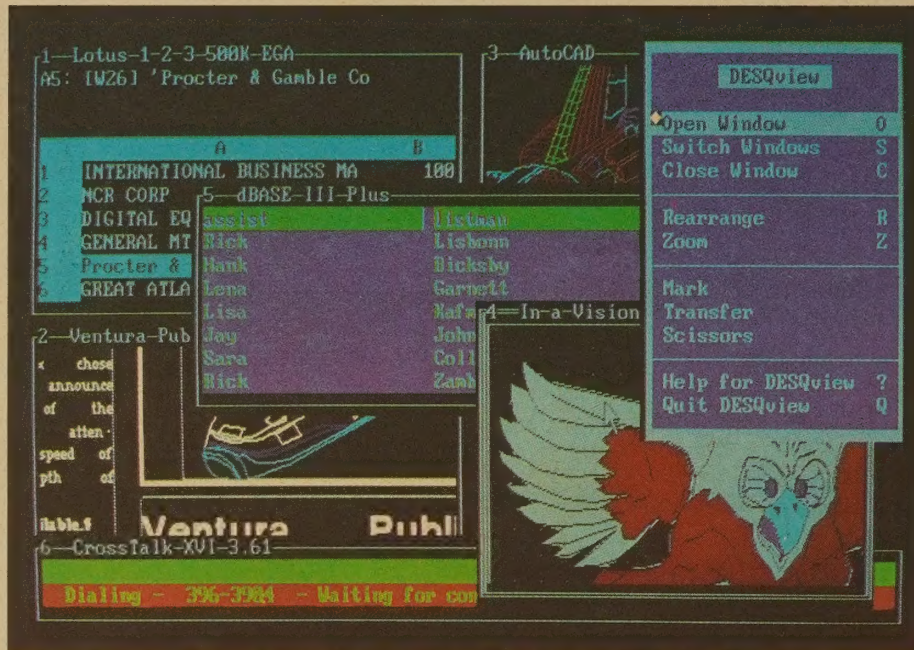
Selecting DESQview, the environment of choice, can give you the productivity and power you crave, without the loss of your old programs and hardware. If you like your existing programs, want to use them together, transfer data between them, print, sort, communicate with or process in-background, yet still have the need to keep in place your favorite PC(8088, 8086, 80286 or 80386), DESQview is the "proven true" multitasking, multi-windowing environment for you. Best of all, DESQview 2.0 is here now, with all the money saving, time saving, and productivity features that others can only promise for the all-too-distant future.

And with DESQview's new graphics enhancements for Hercules, CGA, EGA, and VGA, Version 2.0 still offers the same award winning and pioneering features for programs that earned DESQview its leadership, only now you can also run desktop publishing programs, CAD programs, even GEM™, Topview™, and Microsoft Windows™ specific programs. In some cases you'll add as little as 10-40K to your system overhead. Now you can have multi-tasking, multi-windowing, break the 640K habit too and still get an auto dialer, macros, menus for DOS and, for advanced users, a new complete application programmer's interface capability. No wonder that over the years, and especially in recent months, DESQview, and now DESQview 2.0 have earned extravagant praise from some of the most respected magazines in the industry.

"Product of the Year" by readers vote in InfoWorld.

"Best PC Environment" by popular vote at Comdex Fall in PC Tech Journal's "System Builder" Contest.

"—I wouldn't want to run an IBM



One picture is worth a thousand promises.

or compatible computer without DESQview"—InfoWorld, Michael Miller.

"A colossus among windowing environments"... "will run almost anything"—PC Week, Marvin Bryan.

"Windows, promises, but DESQview delivers"—MICRO-TIMES, Birell Walsh.

No other environment has consistently pioneered features, openness, and productivity. See for yourself. Send in the coupon. The possibilities are endless with DESQview 2.0.

Attention Programmers: For more information about Quarterdeck's API, and future 386 program extensions, call us today.

#### SYSTEM REQUIREMENTS

IBM Personal Computer and 100% compatibles (with 8086, 8088, 80286 or 80386 processors) with monochrome or color display; IBM Personal System/2 • Memory: 640K recommended; for DESQview itself 0-145K • Expanded Memory (Optional): expanded memory boards compatible with the Intel AboveBoard; enhanced expanded memory boards compatible with the AST RAMpage • Disk: Two diskette drives or one diskette drive and a hard disk • Graphics Card (Optional): Hercules, IBM Color/Graphics (CGA), IBM Enhanced Graphics (EGA), IBM Personal System/2 Advanced Graphics (VGA) • Mouse (Optional): Mouse Systems, Microsoft and compatibles • Modem for Auto-Dialer (Optional): Hayes or Compatible • Operating System: PC-DOS 2.0-3.3; MS-DOS2.0-3.2 • Software: Most PC-DOS and MS-DOS application programs; programs specific to TopView 1.1, GEM 1.1 and Microsoft Windows 1.03 • Media: DESQview 2.0 is available on either 5 1/4" or 3 1/2" floppy diskettes

Rush me DESQview 2.0! Today!

MT-10

| No. of Copies | Media 3 1/2" / 5 1/4" | Product                  | Retail Price ea. | Total |
|---------------|-----------------------|--------------------------|------------------|-------|
|               |                       | DESQview 2.0             | \$129.95         | \$    |
|               |                       | Shipping & Handling USA  | \$ 5.00          | \$    |
|               |                       | Outside USA              | \$ 10.00         | \$    |
|               |                       | Sales Tax (CA residents) | 6.5%             | \$    |
|               |                       | Amount Enclosed          | \$               | \$    |

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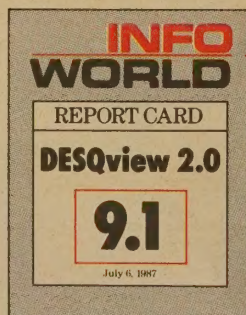
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NOTE: If you own DESQview call us for a special upgrade offer, or send in your DESQview registration card. AST Special Edition users included.



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19" landscape mounted monitor and adapter card. It has the highest resolution of ANY competitor, the ability to display legible facing pages, 4 shades of gray, and a non-interlaced, flicker free screen. With the exceptionally high resolution of 1664 x 1200, entire pages filled with text and graphics can be viewed comfortably on the monitor screen. Works with Windows, Gems, Pagemaker, Ventura Publisher and several PC programs like Lotus 1-2-3 & AutoCad.

**SPECIAL OFFER** with the above system — including the Stanford 286-10 (6/10 MHz) Turbo AT system (basic configuration).

**\$3099<sup>00</sup>**

## EGA/VIDEO ADAPTERS

**ENHANCED EGA WITH AUTO SWITCH**  
Fully Hercules compatible. Automatic switchable to CGA, MGA or EGA mode. Supports Plantronics Colorplus mode (320 x 200 with 16 colors, 640 x 200 with 4 colors). Light pen input. 132 columns in text mode.

**\$175<sup>00</sup>**

**ENHANCED EGA WITH PRINTER PORT**  
Fully compatible with CGA, MDA, EGA and Hercules. PGA resolution: 640 x 480, 1056 x 352 with Multi-Sync Monitor. Supports 132 column x 44 lines on EGA Monitor. Supports CGA 640 x 400 on Multi-Sync Monitor with programmable double scan capability. Parallel printer port. Light pen interface. GENOA chips set.

**\$185<sup>00</sup>**

## I/O CARDS/MODEMS/ MOUSE SYSTEMS/ NO SLOT CLOCK

■ **MULTI I/O CARD FOR PC/XT/AT**  
One parallel port (LPT1/LPT2). One serial port (COM1/COM2). Optional second serial port, game port and clock-calendar. **\$60<sup>00</sup>**

■ **MULTI I/O CARD FOR PC/XT**  
Controls 2 - 360 K floppy drives. Parallel port. Two RS-232C ports (COM1/COM2 option). Clock/calendar with battery backup. **\$79<sup>00</sup>**

■ **SERIAL II CARD**  
One RS-232C asynchronous communication interface. Second serial port option. **\$30<sup>00</sup>**

■ **SERIAL II/PARALLEL CARD**  
Two RS-232 ports (COM1 standard, COM2 option). One parallel printer port. Programmable BAUD rate generator. **\$69<sup>00</sup>**

■ **300/1200 BAUD MODEM**  
Halfsize internal Hayes compatible. Includes communication software. Auto dial/auto answer. Touchtone/pulse dialing. Two year limited warranty. **\$89<sup>00</sup>**

■ **PC OPTICAL MOUSE**  
Dr. HALO software included. 200 dots/inch. Laser driven. 3 buttons. Serial mouse. Works with Auto-Cad/Windows/PC Paint. **\$109<sup>00</sup>**

■ **NO SLOT CLOCK**  
Real time clock/calendar for PC XT. Uses no slot. Includes software. 20 year battery. **\$39<sup>00</sup>**

## STANFORD SYSTEM XT TURBO

- 4.77/8 MHz switchable
- 640 K RAM
- Phoenix BIOS
- Floppy controller
- 360 K floppy drive
- AT style keyboard
- Monographic printer board
- Hi-res monochrome monitor
- Norton SI1.7
- 150 watt power supply
- High quality case

**\$485<sup>00</sup>**

## COLOR SYSTEM WITH RGB MONITOR

**\$699<sup>00</sup>**

## STANFORD TURBO XT SYSTEM 4.77/10 MHZ

- 4.77/10 MHz software switchable M/B
- Norton SI: 3.3
- Software (keyboard) selectable speed
- Built-in clock/calendar with battery back-up
- 640K DRAM on board
- 8 expansion slots
- Socket for optional 8087 math co-processor
- 150 watt power supply
- Floppy drive controller
- 360K floppy drive
- AT/XT style keyboard
- AT Jr. case, XT size with AT features
- Hardware Reset and Turbo switches
- Keyboard lock
- Power LED
- Monographic printer card
- Hi-res monochrome monitor

**\$529<sup>00</sup>**

## STANFORD 80286 ACCELERATOR CARD FOR PC/XT

Accelerates your PC/XT to faster speeds than AT. 80286/8088 mode switchable. Clock speed: 10 MHz, 8 KB of high speed 0 wait state cache memory. Support for 80287 running at 6 or 10 MHz.

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## STANFORD SYSTEM 286-10 (6/10 MHZ)

- 80286-10 microprocessor
- 640 K RAM expandable to 1024 KB
- Socket for 80287
- Phoenix BIOS
- Switchable 6/10 MHz
- 200 watt power supply
- AT style keyboard
- Hard & floppy controller
- 1.2 MB floppy drive
- Clock calendar with battery backup
- Monographic printer card
- Hi-res monochrome monitor

**\$1005<sup>00</sup>**

## STANFORD 286-10 0 WAIT STATE SYSTEM

- Compact size AT main board
- 8/10 switchable clock
- Award BIOS
- 640 K RAM, expandable to 1024 KB
- 80286-10 CPU. Socket for 80287 math coprocessor
- Hard & floppy controller
- 1.2 MB floppy drive
- Monographic card
- Hi-res monochrome monitor
- AT style keyboard

**\$1065<sup>00</sup>**

## MEMORY EXPANSION CARDS

■ **EEMS RAM CARD FOR XT OR AT**  
8-bit 2 MB expanded memory per card and up to 4 cards per PC/XT/AT. Software utilities provided: Print Buffer (printer spooler), Turbo Disk (RAM disk). Board comes with O.K. **\$99<sup>00</sup>**

■ **EEMS RAM CARD FOR AT**  
16-bit 2 MB extended or expanded memory per card and up to 4 cards per PC/AT. Software supported: DESQVIEW, Framework, Symphony and Lotus 1-2-3. Board comes with O.K. **\$129<sup>00</sup>**

■ **EEMS RAM CARD FOR 386 SYSTEM**  
32-bit 2 MB extended memory card for the 386 AT system board. This card uses 256 K x 1 DRAM chips with 120 ns access time. Board comes with O.K. **\$199<sup>00</sup>**

■ **640/576 K RAM CARD**  
Memory expansion up to 640 K/576 K DRAM. Boards come with O.K. memory. **\$54<sup>00</sup>/49<sup>00</sup>**

## STANFORD TURBO SYSTEM 386 16 MHZ

- Intel 32 bit 80386 CPU 16 MHz CMOS memory, 6/16 MHz switchable
- 512K interleave 32 bit RAM on board
- RAM can be expanded to 4 MB of 32 bit high speed interleaved memory
- Two 32 bit, two 16, and two 8 bit expansion slots
- Supports 80837 math co-processor
- Phoenix or Award BIOS
- 200 watt power supply
- AT style keyboard
- Hard & floppy controller
- 1.2 MB floppy drive
- Monographic printer card
- Hi-res monochrome monitor
- Clock calendar w/ battery backup

**\$2479<sup>00</sup>**

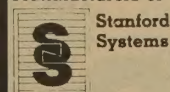
## BARGAINS OF THE MONTH

- Seagate ST 4038 (30 MB, Full Ht, 28 ms) ..... **\$485<sup>00</sup>**
- Alphacom Printer 101 (Letter Quality) ..... **\$179<sup>00</sup>**
- Textra Word Processing software (Ann Arbor Software) ..... **\$39<sup>00</sup>**
- Polaroid 5¼", 2S/2D ..... **\$15<sup>00</sup>**
- MITAC Portable VISO ..... **\$559<sup>00</sup>**
- 4.77 MHz, 1 Floppy
- Color Graphic on board composite & RGB/SCD
- Swivel base monochrome monitor
- Serial port RS-232C \* 2
- Parallel port \* 1
- Keyboard non-detachable (81 keys with numeric key pad).
- Disk controller on board
- LED indicator/Power on & disk drive
- Power supply 40 watt
- MITAC monochrome monitor ..... **\$69<sup>00</sup>**

## SAMSUNG MONITORS

- **THOMSON AMBER 230A MONOCHROME**  
12" amber TTL. IBM and Hercules compatible. TTL data cable included. **\$109<sup>00</sup>**
- **THOMSON 450A SPREADSHEET MONITOR**  
15" amber 132-column TTL. Non-glare, flat screen. IBM MDA, CGA or Hercules compatible. TTL/RGB data cable included. **\$189<sup>00</sup>**
- **THOMSON 4120 CGA**  
14" RGBI/video composite/analog. IBM, Apple, Commodore and Atari compatible. RGB data cable included. Green text switch. **\$309<sup>00</sup>**
- **THOMSON 4160A CGA**  
14", 640 x 200 resolution, RGBI/RGB analog. Tinted, non-glare screen. IBM CGA compatible. Green/amber text switch. RGB data cable included. **\$349<sup>00</sup>**
- **THOMSON 4460 EGA**  
14", 640 x 350 resolution, .38 mm dot pitch. IBM EGA or CGA compatible. Tilt/swivel stand and RGB data cable included. **\$449<sup>00</sup>**
- **THOMSON 4375 ULTRA SCAN**  
14", RGBI/TTL/analog/video composite. IBM and Hercules compatible. Super high contrast, non-glare screen. Tilt/swivel stand and RGB data cable included. **\$579<sup>00</sup>**

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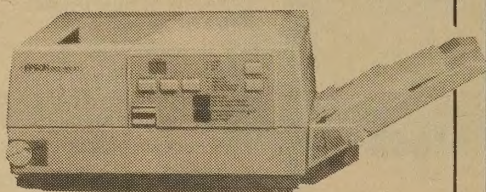
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# '87

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## NOW— THE LASER FROM THE LEADER

THE EPSON® GQ-3500  
LASER PRINTER



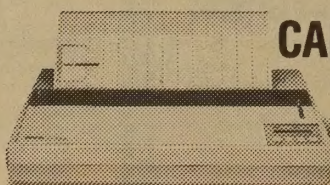
**CALL**

- Compact new laser printer delivers incredible high resolution output on all types of paper for crisp text and graphics
- Epson Selectype IV control panel allows instant access to eleven popular printer functions
- Seven built-in fonts, convenient paper handling and a color option make this one of the most versatile printers you'll ever use

## "CLASS ACT!"

—PC Magazine, November 11, 1986

THE EPSON LQ-2500  
DOT-MATRIX PRINTER



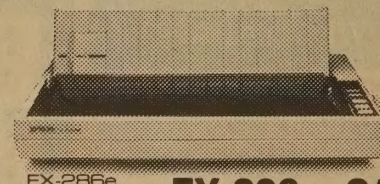
**CALL**

- 24-pin printhead for high resolution output
- Prints 324 characters per second in draft mode; 405 characters per second ultra-high speed mode; 108 characters per second Letter Quality mode
- Advanced Epson Selectype III LCD control panel prompts, confirms and stores print modes and font settings

## AMERICA'S NEW BUSINESS CHOICE.

EPSON®

FX-286e/FX-86e  
DOT-MATRIX PRINTERS



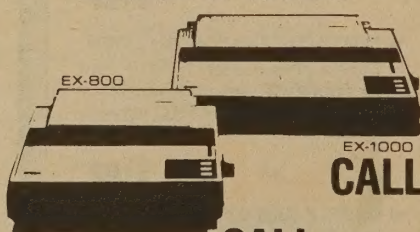
FX-286e

**FX 286e CALL**  
**FX 86e CALL**

## "BETTER- THAN-EVER RESULTS!"

—PC Magazine, November 11, 1986

THE EPSON EX-800 AND EX-1000  
DOT-MATRIX PRINTERS



**CALL**

**CALL**

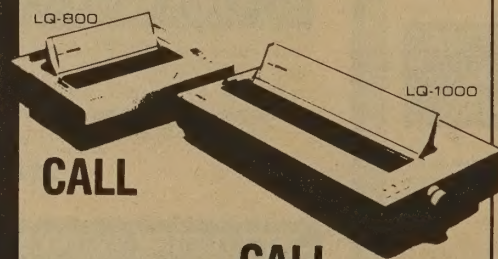
- Prints draft mode at a fast 300 characters per second; 60 characters per second in Near Letter Quality mode
- New Epson Selectype II feature lets you choose from eight different typestyles at the touch of a button
- Versatile paper handling with Automatic Sheet Load and Push Feed Tractor

**LX-800 .....CALL**

## EDITOR'S CHOICE.

—PC Magazine, November 11, 1986

THE EPSON LQ-800 AND LQ-1000  
DOT-MATRIX PRINTERS



**CALL**

**CALL**

- High resolution 24-pin printhead for outstanding letter quality output
- Prints 180 characters per second in draft mode; 60 characters per second Letter Quality mode
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- Built-in 7K buffer increases productivity
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PRINTERS

# ADVANCE

COMPUTER SYSTEMS

### 3 LOCATIONS TO SERVE YOU

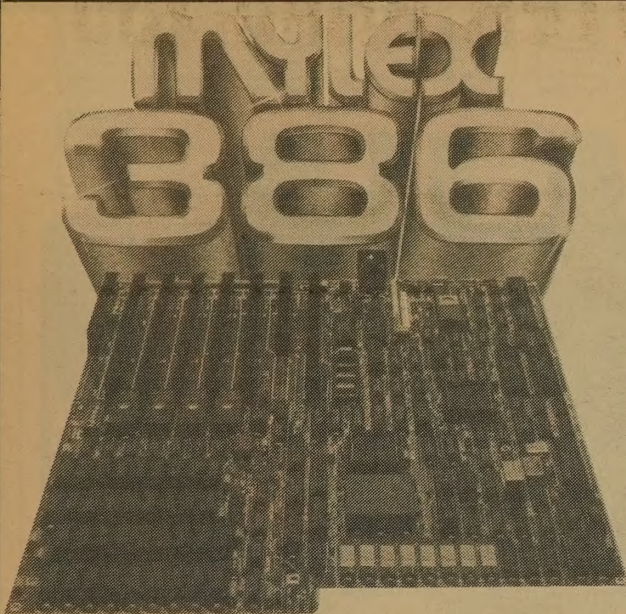
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## The MYLEX 386 System Board!!

### The 386 Board Features:

- Intel 80386 6/16 MHz Keyboard selectable
- 1MB or 4MB of 32 bit RAM on the system board
- 64KB or 32-bit no wait-state CACHE memory
- BIOS by AMI
- 6-16 bit slots & 2-8 bit slots
- Battery backup for Clock/Calendar and Hardware Setup
- Socketed for 80287 6/10 MHz coprocessor
- Norton Rating 23.5
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- Made in USA

### FASTEST 386 IN THE WORLD At This Price

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|---------------------------|---------|
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| PANASONIC 1081/1091 ..... | 170/199 |
| HP LASER .....            | 1699    |
| CANON LASER .....         | 1799    |
| OKIDATA LASER .....       | 1599    |
| EPSON LASER .....         | LOW     |
| AST LASER .....           | LOW     |
| DATA PRODUCTS .....       | CALL    |
| APPLE LASER + .....       | LOW     |
| CARTRIDGE .....           | 95      |

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|-----------------------------------------------|------|
| VIDEO 7 DELUXE .....                          | 249  |
| AST SIXPAK PLUS 64K/256K (EXP. to 384K) ..... | 160  |
| AST ADVANTAGE .....                           | 348  |
| ORCHID TINY TURBO .....                       | CALL |
| ORCHID TURBO EGA .....                        | 698  |
| JRAM 3 LOTUS/INTEL AT .....                   | CALL |
| JRAM 111 AT .....                             | 238  |
| 3MB EXPANSION FOR AT OK .....                 | 129  |
| PARADISE 408 .....                            | CALL |
| 120B Modem + SW .....                         | 79   |

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### COMPUTERS

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| IBM MOD 50 .....                 | CALL      |
| IBM AT 339 .....                 | 3350      |
| COMPAQ 12MHz .....               | CALL      |
| COMPAQ 386/40MB .....            | 4599      |
| COMPAQ PORT II + 40MB .....      | 3795      |
| COMPAQ PORT III .....            | CALL      |
| AST 286 PREMIUM ALL MODELS ..... | LOW       |
| NEC LAPTOP .....                 | 1395      |
| NEC COMPUTER .....               | CALL      |
| NEC POWER MATE I .....           | 1290      |
| NEC POWER MATE II .....          | 1699      |
| TOSHIBA 1100/3100 .....          | 1525/2995 |
| PORTABLE 386 .....               | 2999      |
| SAMSUNG BASE AT .....            | 1295      |
| SAMSUNG AT COMPLETE .....        | 1495      |
| APPLE MAC + .....                | 1695      |
| 386 BOARD w/1MB .....            | 1295      |

### PRINTERS

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| EPSON FX86E/286E .....    | 315/434 |
| EPSON EX800/1000 .....    | 395/565 |
| EPSON LQ800/1000 .....    | 475/644 |
| NEC P6/P7 .....           | 444/599 |
| OKIDATA 292/293 .....     | CALL    |
| CITIZEN 1200/310 .....    | 170     |
| PANASONIC 3131/3151 ..... | 299     |
| IBM PRO PRINTER .....     | 389/599 |

### PLOTTERS/DIGITIZERS

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|-----------------------------------|------|
| DMP 41 (HUSTON INSTRUMENTS) ..... | LOW  |
| DMP 51 .....                      | LOW  |
| DMP 52MP 14 PEN COLOR .....       | LOW  |
| JDL COLOR .....                   | CALL |
| KURTA/SUMA GRAPHICS .....         | CALL |

### DISK DRIVES

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| TEAC/FUJITSU 1/2HT .....           | 89/82       |
| 20/30/40MB Seagate HD .....        | 260/379/499 |
| 30MB AT/60 MB AT .....             | 495/1290    |
| 10MB 10/20/50 TAPE BACKUP .....    | LOW         |
| IOMEGA BERNOULLI BOX 20x20 .....   | CALL        |
| 120 MEG 14 MS ACCESS .....         | 2600        |
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|-----------------------------------|-----|
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| TAXAN 640 .....                   | 595 |
| SAMSUNG AMBER .....               | 83  |
| PGS SR-12 .....                   | LOW |
| NEC MULTISYNC .....               | 525 |
| HITACHI 19" COLOR .....           | LOW |
| NANAO EGA .....                   | LOW |
| SAMSUNG EGA "SPECIAL PRICE" ..... | 369 |
| SONY MULTISCAN .....              | 599 |

### CARDS

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| EVEREX EDGE .....                 | 230 |
| HERCULES GRAPHIC MONO/COLOR ..... | LOW |
| INTEL ABOVEBOARD AT/PS .....      | 298 |
| PARADISE EGA .....                | 299 |
| GENOA EGA .....                   | 328 |

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|-----------------------------|-----|
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| D BASE III PLUS .....       | 425 |
| LOTUS 1-2-3 RELEASE 2 ..... | 320 |
| LOTUS SYMPHONY .....        | 420 |
| MULTIMATE .....             | 265 |
| MICROSOFT WORD .....        | 240 |
| WORDSTAR 2000 PLUS .....    | 375 |
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### DESKTOP PUBLISHING

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| SURAH 386 .....       | 2995 |
| 386 MOTHERBOARD ..... | 1495 |
| INTEL 386 BOARD ..... | CALL |

### 386 Expansion Boards For Compaq

|                              |      |
|------------------------------|------|
| 2 MB .....                   | 990  |
| 8MB with 4MB Installed ..... | 1590 |

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**WALNUT CREEK** 1987 N. Main St.  
**(415) 945-8011**  
**SAN FRANCISCO** 1231 Market St.  
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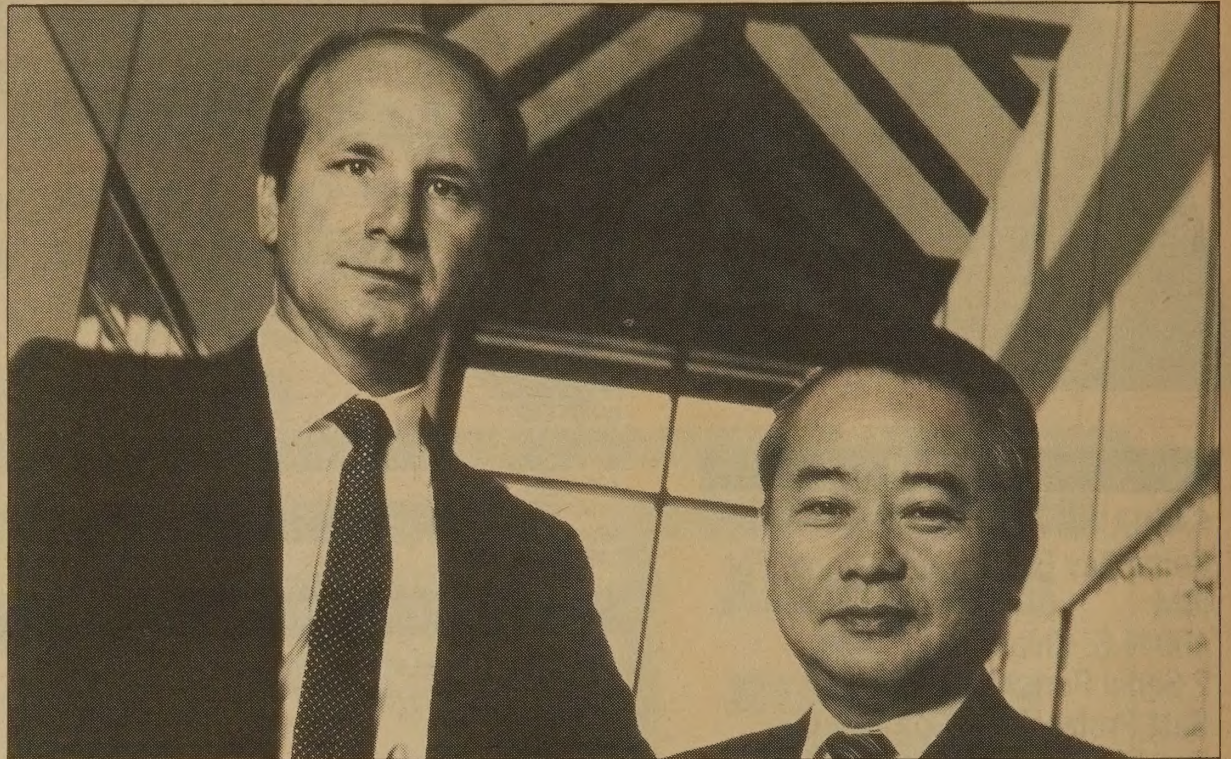


**COVER STORY**

**54 Toshiba  
In America:  
The Best Of Times,  
The Worst Of Times**

*By Jeff Spurrier*

Just as Toshiba was well on its way to staking out a major portion of the laptop computer marketplace, its fledgling American division found itself confronting problems and controversy on several fronts — from restrictive sanctions on Japanese products to the as-yet-undetermined consequences of the Toshiba Machine scandal to the normal day-to-day concerns of setting up operations in a new country. Toshiba America executives Kazuo Ishiguro and Dennis Eversole discuss the company's current difficulties and hopes for the future, as well as its products.



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*By Robert Beauchamp*

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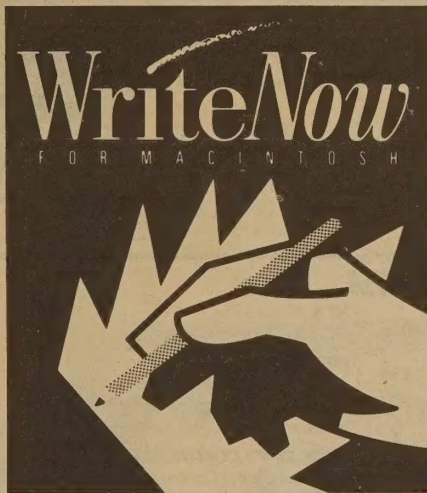
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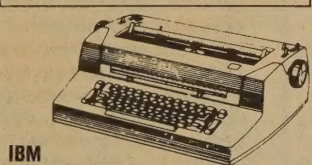
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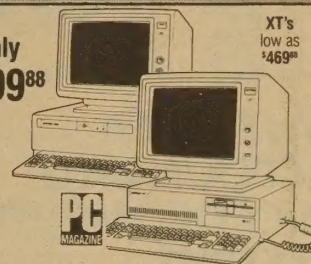
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| 1509 | 394 <sup>99</sup> |
| 1709 | 539 <sup>99</sup> |
| HR40 | 649 <sup>99</sup> |

### HEWLETT PACKARD

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| Laser Series II | 1699 <sup>99</sup> |
| Laser Jet Plus  | 2948 <sup>99</sup> |
| Laser Jet 500   | 3289 <sup>99</sup> |

### CITOH

|             |                   |
|-------------|-------------------|
| Prowriteman | 249 <sup>99</sup> |
| 315         | 629 <sup>99</sup> |

### Panasonic

|               |                    |
|---------------|--------------------|
| 1080i         | 178 <sup>99</sup>  |
| 1592          | 479 <sup>99</sup>  |
| 1524 (24 pin) | 628 <sup>99</sup>  |
| Laser Printer | 1488 <sup>99</sup> |

Others

### STAR GEMINI

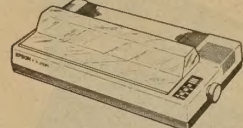
|               |                   |
|---------------|-------------------|
| SG 10         | 228 <sup>99</sup> |
| 2410 (24 pin) | 529 <sup>99</sup> |
| NBX 15        | 388 <sup>99</sup> |
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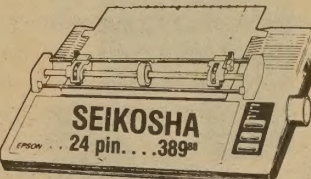
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|---------------|-------------------|
| 321 SL        | 489 <sup>99</sup> |
| 341 SL        | 669 <sup>99</sup> |
| 351C          | 999 <sup>99</sup> |
| 351           | 899 <sup>99</sup> |
| 321 Par & Ser | Call              |



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| Okimate 20    | 135 <sup>99</sup>  |
| 192 Plus      | 374 <sup>99</sup>  |
| 193 Plus      | 529 <sup>99</sup>  |
| 292 P         | 489 <sup>99</sup>  |
| 293 P         | 659 <sup>99</sup>  |
| Laser Printer | 1388 <sup>99</sup> |

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| SP 1000           | 199 <sup>99</sup> |
| SP 1300 (300 CPS) | 499 <sup>99</sup> |
| SL 80 (Com 64)    | 229 <sup>99</sup> |
| DX 10             | 249 <sup>99</sup> |
| 24 Pin (new)      | 399 <sup>99</sup> |

Others

### IBM

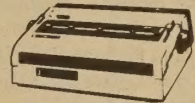
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|--------------|-------------------|
| Proprinter   | 388 <sup>99</sup> |
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### DAISYWHEEL PRINTER Par+Ser 269<sup>99</sup>

### DIABLO

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| 635 | 1088 <sup>99</sup> |

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| SILVER-REED Exp 400 (10 CPS) | 198 <sup>99</sup> |
| Exp 600 (25 CPS)             | 499 <sup>99</sup> |
| Exp 800 (40 CPS)             | 689 <sup>99</sup> |
| Exp 500 (16 CPS)             | 249 <sup>99</sup> |

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| 3550           | 799 <sup>99</sup>  |
| P6 (24 pin)    | 448 <sup>99</sup>  |
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| 6300 | 669 <sup>99</sup> |
| 5510 | 359 <sup>99</sup> |

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| LPBP-8       | 1948 <sup>99</sup> |
| Other Models | Call               |

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| DX 2100F      | 379 <sup>99</sup>  |
| DL 2400 Color | 1099 <sup>99</sup> |

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| MSP 10 | 299 <sup>99</sup> |
| MSP 15 | 374 <sup>99</sup> |
| MSP 35 | 458 <sup>99</sup> |

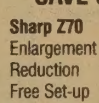
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| Ripro 2070  | 1598 <sup>99</sup> |
| Ripro       | 779 <sup>99</sup>  |
| Sharp 7750  | 1888 <sup>99</sup> |
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| Free Setup/delivery    |                    |
| Reduction mode         |                    |
| Was 3995               |                    |
| Now 2288 <sup>99</sup> |                    |

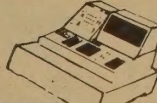


|                       |                   |
|-----------------------|-------------------|
| Ricoh Jr.             | 489 <sup>99</sup> |
| Personal Copier       |                   |
| Compact Color Copies  |                   |
| Superb Quality        |                   |
| Beats Canon           |                   |
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| Now 489 <sup>99</sup> |                   |

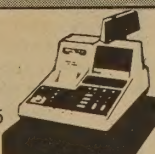
|             |                   |
|-------------|-------------------|
| Canon PC-10 | 588 <sup>99</sup> |
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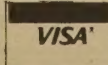
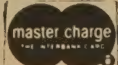
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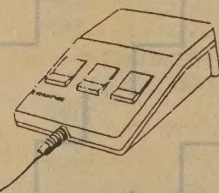
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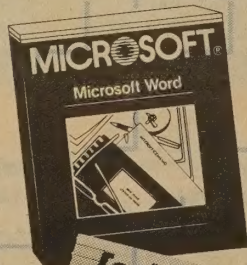
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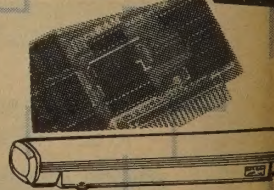
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|----------------------|--------------------|----------|
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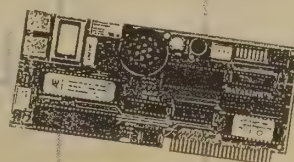
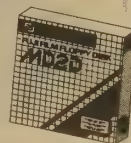
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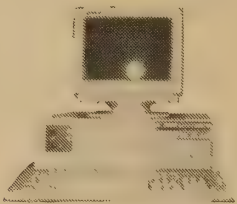


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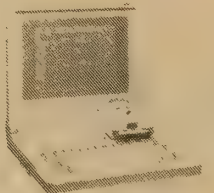
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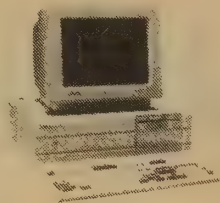
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**September 16-17 DataFlex Class.** Mountain View. Call (415) 964-1500 for information.

**September 18-20 AppleFest '87.** San Francisco Civic Auditorium. For information contact Cambridge Marketing Inc., (617) 860-7100.

**September 20-25 Hewlett-Packard Business Computer Users Conference.** Las Vegas, Nevada. Contact INTEREX at (408) 738-4848 for information.

**September 22 Careers For The Digital Artist.** San Francisco Art Institute Auditorium, 800 Chestnut Street, San Francisco. ACM/SIGGRAPH (415) 321-5046.

**September 25-27 Home Computing Center's Third Annual Computer Fair.** Tanforan Park Shopping Center, San Bruno. Contact Jon Thomas (415) 341-9215.

**September 22-25 Designing Modern Software/User Interfaces.** Palo Alto. Contact Integrated Computer Systems (800) 421-8166.

**September 22-25 Integrated Voice/Data Communications And ISDN.** Palo Alto. Contact Integrated Computer Systems (800) 421-8166.

**September 26 Sacramento Computer Show.** Cal Expo. Golden Gate Shows (415) 388-8893.

**September 26 Computer Swap.** Santa Clara Fairgrounds, San Jose. Computer Swap America (415) 366-9162.

**September 28-October 2 tableBASE Educational Seminar/Users Conference.** Westin St. Francis Hotel, San Francisco. Contact Donna Ronayne. Data Kinetics (613) 238-2852.

**October 3 Vallejo Computer Show.** Solano County Fairgrounds. Golden Gate Shows (415) 388-8893.

**October 5 PC Coordinators Conference.** Galleria Park Hotel, 191 Sutter, San Francisco. Contact Marilou Blair, Maggi M. Morehouse & Associates (415) 431-8482.

**October 5-9 Bourne Shell And C Programming, System Administration And UNIX Classes.** Hyatt House, Palo Alto. For more information contact Berkeley Decision/Systems at (408) 458-0500.

**October 8-9 Electronic Messaging '87.** The Electronic Messaging Association's annual conference. Sir Francis Drake Hotel, San Francisco. Call (202) 293-7808 for more information.

**October 9 The Alternative: A Computer System For Real Estate Property Management And Accounting.** Businessland, San Francisco. No fee, but registration required. Call Howard M. Haberman Associates, (415) 641-0850 for more information.

**October 10 Computer Mart.** De Anza College campus center. Call (408) 996-4350 for information.

**October 11-14 Third Annual Software Publishers Association Fall Conference.** Cambridge, Massachusetts. Contact the SPA at (202) 452-1600.

**October 15 The Case For Developing AI Software For Microcomputers.** Presentation by Dr. Steven

Hardy, Teknowledge. Palo Alto. Sponsored by Software Entrepreneurs' Forum. Call (415) 854-7219 for information and registration.

**October 16-17 Eighth Annual Fall Computer Using Educators Conference.** Hyatt San Jose and Independence High School San Jose. Contact CUE at (415) 328-2248 for more information.

**October 17 Accounting And Financial Management For The Entrepreneur.** Dunfey Hotel, San Mateo. Sponsored by Software Entrepreneurs' Forum. Call (415) 854-7219 for information and registration.

**October 17-18 Oakland Computer Show.** Oakland Coliseum. Golden Gate Shows (415) 388-8893.

**October 20-23 PC-Based Tools For Software Analysis And Design.** Palo Alto. Contact Integrated Computer Systems (800) 421-8166.

**October 20-23 Machine Vision And Image Recognition.** Palo Alto. Contact Integrated Computer Systems (800) 421-8166.

**October 21-23 IFIP Conference On Computers And The Law.** Santa Monica. Contact J.J. Buck BloomBecker at (213) 850-0509 or Michael M. Krieger at (213) 208-2461.

**October 22 Mactoberfest.** UC Campus, Berkeley. Sponsored by Berkeley Macintosh User Group. Call (415) 549-2684 for more information.

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| Toshiba 3.5" 720K  | \$102     |

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| BTC 5339 Enhanced | \$59 |

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| XT/AT Case             | \$25/\$59 |
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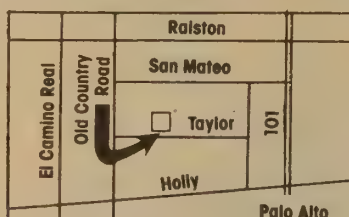
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|-------------------|-------|
| Seagate-225 Kit   | \$279 |
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| ST-4038           | \$469 |
| ST-251 (40M 39MS) | \$419 |
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## CALENDAR OF EVENTS

**October 23-25 Connectivity: Independent Computer Consultants Association Fall Conference.** Stamford, CT. Call Tretter-Gorman Inc., (314) 241-7704 for information.

**October 27-29 Computer Aided Software Engineering Symposium.** Hyatt Regency, Oakland. Call (617) 470-3880 for information.

**October 24 Computer Swap Meet.** San Mateo County Fairground, San Mateo. RK Productions (800) 252-7927.

**October 31 Santa Rosa Computer Show.** Sonoma County Fairgrounds. Golden Gate Shows (415) 388-8893.

**November 2-3 BPI EEO/Affirmative Action Santa Clara Tech/Job Fair.** Santa Clara Marriott. Call BPI at (800) 328-4032.

**November 7 Computer Supermarket Show And Sale.** Santa Clara County Fairgrounds, San Jose. Microshows (800) 433-7469.

**November 19-20 Eleventh Annual Western Educational Computing Conference.** San Francisco Cathedral Hill Hotel. Contact Alexia Devlin, CECC Treasurer, San Francisco State University, Accounting Data, NADAM-358, 1600 Holloway Ave., San Francisco, CA 94132.

**November 19-21 MacFair.** New York City. Call American Expositions Inc. (212) 226-4141.

**November 19-22 imPACT '87 International Conference And Exposition On Electronic Publishing.** Contact Seybold Seminars at (213) 457-5850.

**November 21 Computer Mart.** De Anza College Campus Center, Cupertino. Contact the Students Activity Center (408) 996-4350.

**November 27-29 FORML (FORTH Modification Laboratory) Conference.** Pacific Grove. Sponsored by FORTH Interest Group. Call FIG, (408) 277-0668 for information.

**November 28-29 Computer Supermarket Show And Sale.** Brooks Hall, San Francisco. Microshows (800) 433-7469.

**December 5 Computer Supermarket Show And Sale.** Cow Palace, San Francisco. Microshows (800) 433-7469.

**December 5-6 MIDI Expo.** New York. For information call Arthur O. Kerley, (203) 259-5734.

**December 12 Computer Swap Meet.** Santa Clara County Fairground, San Jose. RK Productions (800) 252-7927.

**December 12-13 Computer Supermarket Show And Sale.** Santa Clara Convention Center, Santa Clara. Microshows (800) 433-7469.

**February 8-11 UniForum, International Conference Of UNIX Systems Users.** Infomart, Dallas, TX. For information call (800) 323-5155.

As a community service, MicroTimes lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the December issue, on the street in November, is October 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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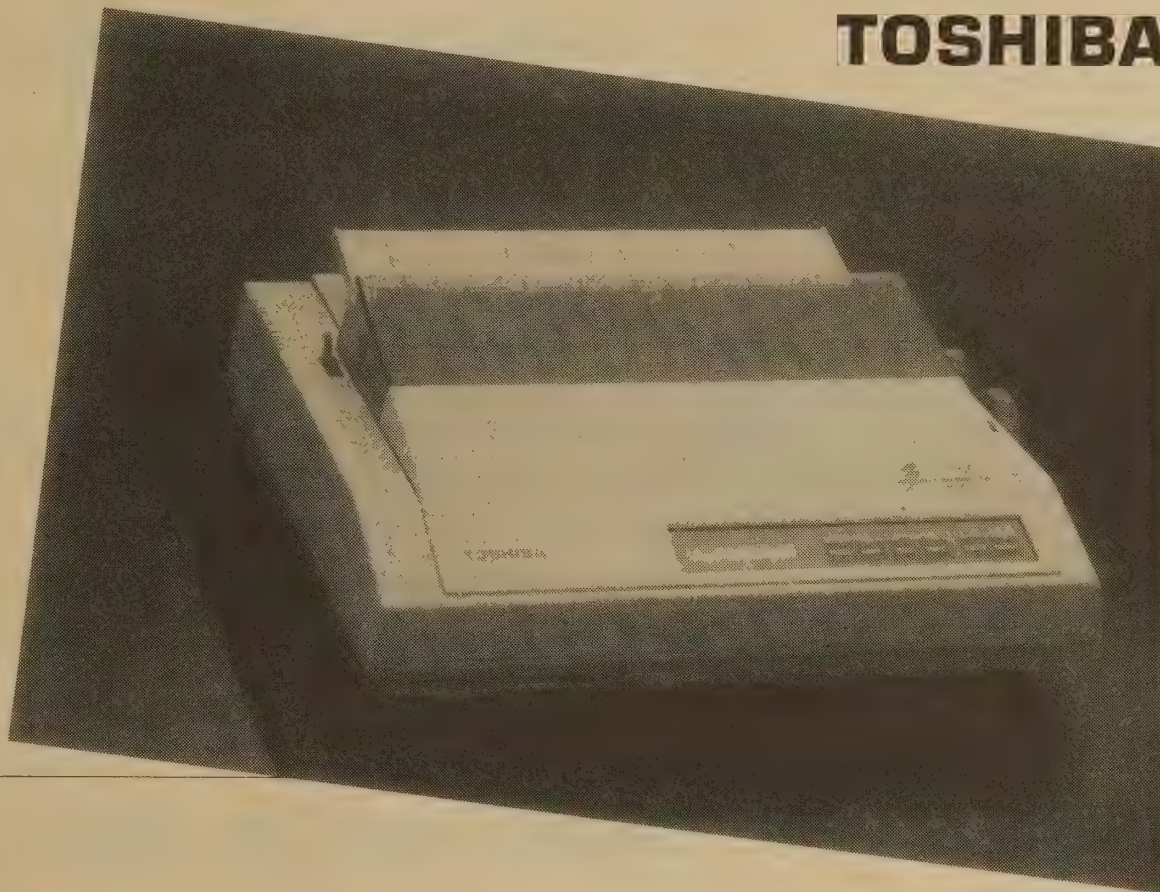
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## BUT JAN LEWIS SAYS...

### *Jan Lewis Commentary*

## There's No Biz Like "Show" Biz!

**C**ommodore's new management team had better pull something off this time at bat, because the company already has several strikes against it. The home market, in which it is champion, peaked at Christmas 1983 and crashed shortly thereafter. Now it's considered a disaster area for most U.S. manufacturers. Even Apple says that there is no home market anymore.

Secondly, management has been a problem for some time. Irving Gould's first choice for CEO, Marshall Smith, lacked both technical and marketing savvy and presided over five quarters of losses. Gould's subsequent appointment, Thomas Rattigan, brought more marketing glitz, but missed a two-year window of opportunity to introduce Commodore's PC clone in the U.S.

Now that he has taken over as CEO himself, Gould faces a formidable foe in his former partner, Atari President

Jack "Business is War" Tramiel. Atari has managed to outposition Commodore with its ST, and is capable of waging another bloody price war.

To top it off, Commodore has been in technical default of bank loans twice in the last two years. Fortunately, the company has converted a substantial portion of its short-term debt to long term, but it is haunted by a checkered financial past and a debt-laden balance sheet.

Yet Commodore continues to position itself as a general-purpose business computer company, offering its 64 and PC lines at the low-end and Amiga at the high end. Won't work. Compaq may have been able to differentiate itself in a nearly undifferentiated market, but I have seen nothing from Commodore that tells me that it can.

If Commodore would get its nose out of the business section for a minute, it would see that the Amiga is

uniquely capable of leadership in the hottest market since desktop publishing—graphics. Surveys show that graphics tops the wish lists of both IBM and Apple users. This is the next boom, and Commodore's Amiga is positioned to ride it—if not to take volume away from the Macintosh II and the potential PS/2 applications, then at least to get a share of the pie.

And although most developers for the Amiga are also looking at or positioning themselves into the Mac II market, the Amiga will, for some time to come, be less expensive than a similarly configured Mac II.

Most importantly, despite Commodore's faux pas in taking almost two years to get genlock (the most obvious and needed peripheral to unlock the machine's video potential) out the door, it is finally possible to configure entire multimedia production systems with the Amiga.

Multimedia production is already

in use in industrial video production and high-tech business presentations. The Amiga allows users to do more than others in its class for multimedia productions.

Just look at the products around! Deluxe Paint II, from Electronic Arts lets you do some mind-blowing things with color bit maps. Products like Amiga Live! and DigiView let you use input from a camera, VCR, or television to fill the computer with video images, both full-motion and freeze-frame. Software from Byte-by-Byte, Aegis, NewTek, Mimetics, let you create single-frame images, using advanced techniques like 3-D modeling and ray-tracing. Mimetics even lets you customize your output to your VCR (or three of them) frame by frame.

The desktop multimedia revolution has arrived and the Amiga is at the front ranks. Hey, Commodore! Don't blow it this time. □

### *Interview*

## IRVING GOULD: Taking Over The Reins At Commodore

**S**ince the resignation of former President and CEO Thomas Rattigan in April, Chairman and controlling stockholder Irving Gould has revamped both the management team and product line at Commodore Business Machines Inc. Commodore has introduced two new Amigas: the enhanced Amiga 2000 (\$1,995) and the low-priced Amiga 500 (\$699). The company also recently cut prices on its line of IBM PC compatibles introduced in this country in January.

**Why have you made these changes and what do you have in mind for the new Commodore?**

The changes I've made have primarily been in the United States. I've put in a known commodity. By that I mean the people who are in there now are known to me, and they're action-oriented. I think this is what we needed for the U.S.... There is absolutely no reason in the world

why we can't do as good a job in the United States as we do in the rest of the world.

**Will you be more involved personally with the day-to-day operations?** Oh, yes.

**What do you see as the role of the Commodore 64 line?**

Our plans for the 64 are more of the same. We think that the 64 still has a number of years of life left in it. We're not anticipating increased sales of the 64, because it's older technology. But with the tremendous installed base and the mammoth amount of software that's out there, we've learned from experience you just don't try to cut off any machine like that. And it's amazing how strong the demand still is for the 64 family of machines.

**You have three product lines: the C64 line, the MS-DOS line and the**

**Amiga line. How are you going to provide a bridge between those lines so that a user of one family has a clear migration path to another Commodore product line?**

We have been exploring the possibility of an emulator of some kind to help the 64 user into AmigaDOS. In other words, he would not have to discard files or software that he's got on the 64. He'd be able to emulate them on the Amiga machine. We've had requests for that, we're exploring it and I'm pretty sure that if we don't come up with something, a third-party developer will.

**You've recently introduced an MS-DOS clone into the United States market. How are you going to distinguish it from all the other clones?**

We're not. A clone is a clone is a clone. We've proved in Europe that there is a market for a [Commodore]

MS-DOS machine. I wouldn't want to bet Commodore's future on MS-DOS—we're more excited about AmigaDOS—but it's an opportunistic market.

**You've been shipping the MS-DOS machine in Europe for almost two years now. Why wasn't your clone introduced into this country earlier?**

That's a good question. I wish I could answer it. No question, it should have been.

**On the financial side, how do you plan to get the company out from under the massive debt load it's currently bearing?**

Every quarter the company is improving its situation. And this last financing we did with Prudential Insurance took a lot of short-term debt and put it into long term. Our balance sheet is improving on a quarterly basis. □



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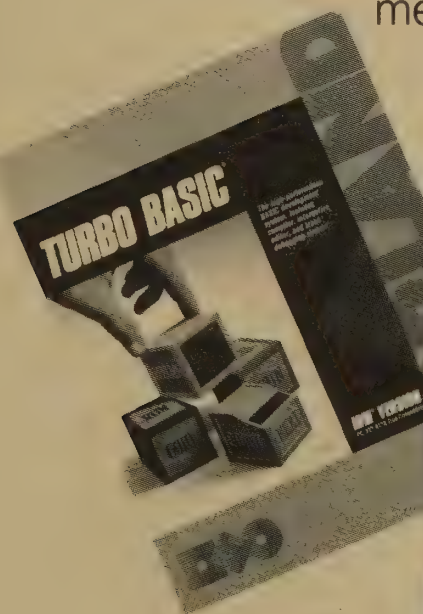
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# ALFRED DUNCAN: A Second Chance For Commodore's Amiga?

**A**lfred Duncan returned to Commodore this summer after a year as president and CEO of Victor Technologies Inc. in Scotts Valley, Calif. From 1980 to 1986 he held top positions with Commodore International Ltd. A former Naval officer and a Harvard MBA, Duncan is now Commodore's general manager, in charge of all U.S. sales and marketing operations.

**Can you point out any specific changes that will be happening within the company in terms of management and product positioning?**

We're reducing our reliance on distributors and increasing a direct sales capability, directly to the computer reseller, and in fact have ended our relationships with many of our distributors and have given the full product line to a number of independent sales organizations that in the past had been selling the Amiga directly to dealers. What that does is allow us to get a little bit closer to the marketplace and find out what's going on... We've just got the PC 10 product and the 64 and 128 into the reps' hands, as well as introducing the two new Amigas.

**Commodore is very strong in Europe and Canada. Do you think any of your experiences there can be translated into the U.S. market?**

One of the reasons the European organization is so strong is that they have always dealt through dealers, they have never dealt with distributors per se, and they don't have a lot of the mass market people in Europe that we have in the U.S. The main reason is they have a strong, loyal dealer base. That's what Commodore used to have in the United States until the 64 was introduced, and that's what we've got to rebuild here. That same thing is true in Canada. Canada has continued to sell their product line through a series of independent dealers. In fact, the PC product line was introduced in Canada at the same time as it was in Europe, and is also very successful there.

**Dealers are having a hard time staying in business and keeping their margins up. They also are pretty swamped with products. What are**

**the strategies that you're using to convince them that they should pick up another line at this point?**

First of all, the margin situation is the way it is because of all the competition, particularly in the MS-DOS machines. I know because I just rejoined Commodore after a year at Victor, and Victor was in the MS-DOS compatible market. So a lot of the margin pressure comes from all the competition. The Amiga offers an alternative operating system and really has no competition at this point, which should allow retailers to keep relatively high margins.

**Do you think that the Amiga's most direct competition for buyer attention is the Macintosh?**

Definitely, at its price point. It's priced at about the same level as the Macintosh SE. And the Macintosh SE is black and white and the Amiga is completely color. I think we'll go after the Apple-type customers with the Amiga 2000.

**The Macintosh seems to be benefiting now from software development, which was very slow to come for the machine, and also from connectivity. What are you doing in terms of encouraging third-party activity for the Amiga?**

Well, first of all, we have a complete developer program in terms of machines and technical support and schematics and all that sort of thing, and have for quite a long time. There are at last count something on the order of 500 titles available for the Amiga. And I've been told that that's more titles than the Macintosh had at a similar period in its development.

Those titles range from all the usual word processors, databases and spreadsheets up to paint packages, CAD/CAM packages, as well as desktop publishing packages. The biggest thing we can do is to foster software development is make sure the machine is a success and get some sales, and that's what we're concentrating on. We do provide full and complete support to all vendors. That was evidenced by Comdex. We had a number of third-party software developers exhibiting their products on our booth, at our expense. We're very gratified that WordPerfect came out with a WordPerfect version for the

Amiga, which they introduced at Comdex. I guess that's the first real big name in terms of business software that has actually written a package for the Amiga utilizing its capabilities.

**Does the Amiga hook up with any laser printers now?**

Yes, all of them, including Linotype professional printing presses, as well as all the popular ones that are on the market.

**Is there any effort to get Aldus on board with PageMaker?**

We have a color desktop publishing system being written by a company called Gold Disk in Toronto, [scheduled to ship last month]. That's a desktop publishing system that is in color, [including] four-color separa-

newspaper, waiting for walk-in traffic. We intend through our advertising program, which you'll see in October, November and December, to go directly to businesses and make them aware of what the Amiga can do. And it's up to the dealer to make the sale.

**What capabilities will you be stressing when you go to the business people?**

Its versatility, everything that it can do. Let's just take desktop publishing for an example. We consider desktop publishing to be a subset of what you might consider "desktop presentation." Desktop presentation also includes desktop video, as well as making slides and that sort of thing. In the United States alone 10 million managers are required to make a presentation at least once a year. And

**"The basic problem with the Amiga was that it wasn't positioned very well from a marketing point of view, plus the company didn't have a distribution base to sell it."**

tion, so it can come out magazine-quality. Very, very impressive. That product was shown at COMDEX.

**How about the issue of office connectivity? What do you intend to do about that problem?**

Well, our machines are IBM-compatible. The Amiga 2000 has an attachment called the Bridge Card that makes it either an XT or an AT. That in itself will allow many corporations to purchase the Amiga. A lot of corporations require MS-DOS compatibility when making computer purchases. With this Bridge Card, you can run an IBM application in a window on the Amiga.

**How about exchanging files between IBM minis and mainframes and DEC VAXes and those types of large systems?**

That's easily done. If IBM can do it, we can do it.

**In terms of product positioning, the Commodore 64 was very successful in the heyday of the home market, so it's very established as a game machine. The Amiga is very popular with technical people. What do you have to do to get the mainstream business buyer?**

We sell the Amiga 2000 through dealer channels that do sell to businesses. We like dealers that have an independent sales organization and actually go out and call on businesses in addition to just running ads in the

most of those presentations encompass slides. With the Amiga, you can wind up making slides 10 minutes before the presentation starts. And really with one presentation that encompasses about 50 slides, you wind up paying for the entire system. The presentation graphics, the desktop video, color image transmission, those sorts of things are features that the competition just does not have yet. IBM will have them next year some time. But we have them now. And they can be of great value to businesses.

**What specific things did [Commodore] do wrong when the Amiga was first introduced?**

The basic problem with the Amiga was that it wasn't positioned very well from a marketing point of view. It was too expensive for a home computer, didn't have any of the software or the IBM compatibility required for a business computer, plus the company didn't have a distribution base to sell it. Up until that time, they'd been selling mainly to mass merchants and discount stores. And those guys can't sell a business computer.

**Do you see any inroads for the company in the education market?**

Definitely. In terms of universities, for example, Amigas are already being used at Stanford Linear Accelerator, at UCLA. I think you'll see quite a bit of interest at the university and graduate school level. □



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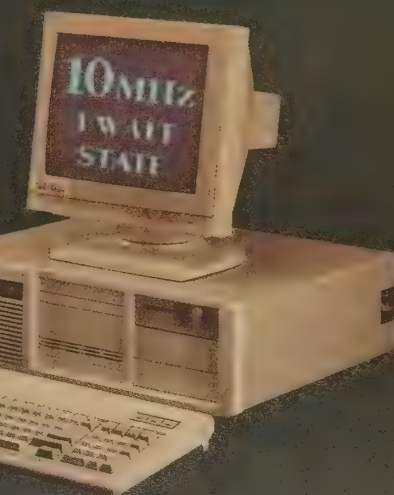
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Karl Koessel PC World  
December 1986



**Software Compatibility**  
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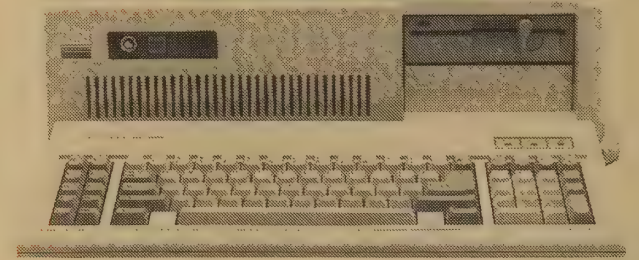
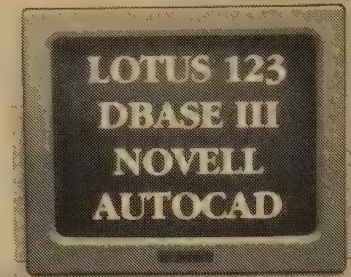


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- 720 x 348 Resolution

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IBM Quality Color Monitors

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- 640 x 350 Resolution 16 Colors
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- EGA and RGB
- Auto Switch

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## NEC MULTISYNC

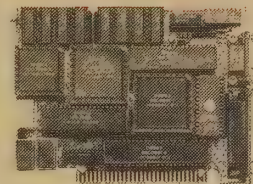


- EGA/PGA/CGA/MDA 800 x 560 Maximum
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- 14" Nonglare Screen
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- NEC 2 Year Warranty

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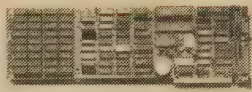


All New

- 720 x 348 132 Columns Mono
- Software Switchable
- Parallel Port
- TTL Port
- 640 x 350 EGA
- 720 x 348 EGA

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## MULTI I/O EMS



- Fits Lotus/Intel/LIM/SIM Specs.
- Expanded Memory Board
- 1 Serial (2nd Optional)
- Installation Software
- Upto 1MB Capacity
- Clock (for XT)
- For AT/XT
- Parallel Port
- Game Port

**\$159**

## CLUB EMS FOR XT

Lotus/Intel Above Board  
Compatible

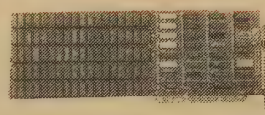


- 0-2MB Expansion Memory (OK)
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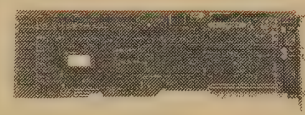


- Intel Above Compatible
- LIM/SIM/EMS Specifications
- For IBM AT and Compatible
- Installation Software
- OS/2 Applications
- Made in U.S.A.

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## HERCULES COMPATIBLE

132 Columns



- Monochrome 132 x 44 Display
- Hercules Compatible Graphics
- Evergraphics from Everex
- Software Selectable
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## MICRO EGA

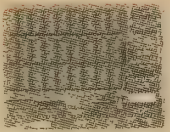


- Monochrome Hercules Compatible
- 720 x 348
- EGA 16 Color 640 x 350
- CGA 4 Color
- 640 x 200

**\$178**

## CLUB 576

(for PC/XT and Portables)

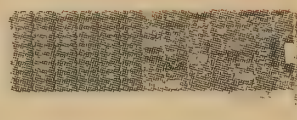


- Upto 576K can be Installed
- Supports 64K/256K DRAM
- Installation Software
- Short Card
- Made in U.S.A.

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## CLUB 384

CLUB 384 for PC/XT

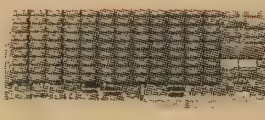


- 0-384K Memory Expansion
- Installation Software
- Serial Port
- Clock/Calendar
- Parallel Port
- Game Port

**\$88**

## EXTENDED MEMORYCARD

For XENIX, OS/2



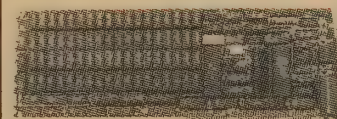
- Used as Ramdisk/Printspooler
- No Piggy Back Required
- Split Memory Addressing
- Installation Software
- 64/256K Back Fill
- 0-3MB Capacity

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## MULTIFUNCTION CARD FOR AT

Manager's Choice

For Xenix/OS/2/Ramdisk, Printspooler



- Printspooler/Ramdisk Software
- Serial Port (2nd Optional)
- 128K Increment Range
- Back Fill Motherboard
- Installation Software
- Parallel Port
- Game Port

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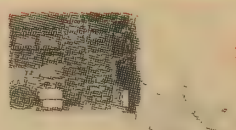
## I/O & GAME PORT



- Serial Port (One Optional)
- Software for Installation
- Game Port (optional)
- Com 1, 2, 3, 4, Addressing
- Half Size Card
- Clock/Calendar

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## I/O & GAME PORT



- Serial Port (Two Optional)
- Com 1, 2, 3, 4 Addressing
- Game Port (optional)
- Software for Installation
- Half Size Card
- Clock/Calendar

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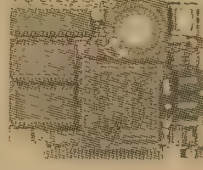
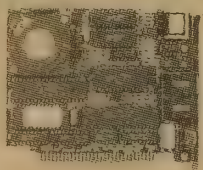
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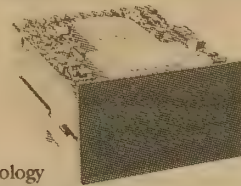
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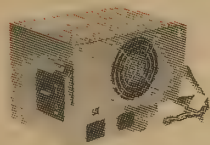
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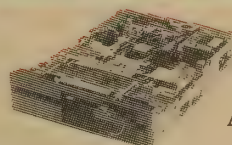
## POWER SUPPLY FOR XT/AT



- FCC, UL, TUV Approval
- 5 Output Leads
- 135 Watt for XT
- 195 Watt for AT
- .5A, High Power

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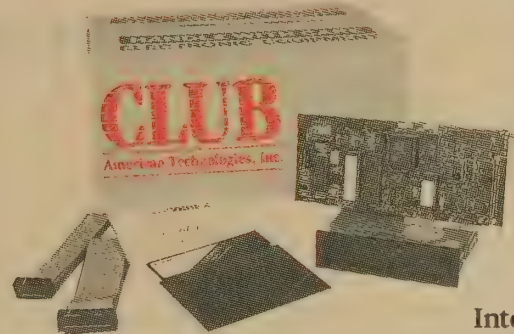


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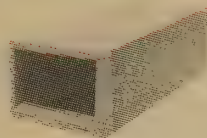
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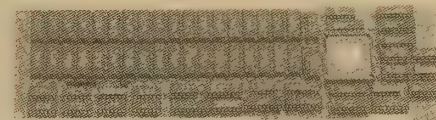
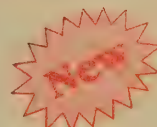
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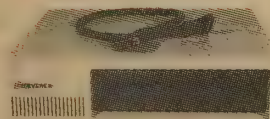
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- Compatible with IBM PS/2 Models 50 and 60
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| 360K Floppy            | <b>\$89</b>  |

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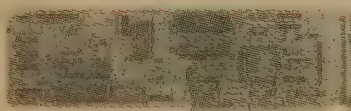
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|------------|------------------|-------------|------------------|
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| • Y Cables                      |              |              | <b>\$8</b>   |
| • HD Controller for XT          |              |              | <b>\$85</b>  |
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## COMDEX Projections, Microsoft/Altos UNIX Plans, Prosperity At Atari

### COMDEX Projects Record Attendance

LAS VEGAS (NB)—The Interface Group projects that COMDEX/Fall '87, slated for November 2-6 at the Las Vegas Convention Center (as always) will attract 1,300 exhibitors, a record number. Last year 1,200 showed their wares. In addition, there are 52 conference sessions planned of interest to resellers, dealers, original equipment manufacturers, and distributors. And for the first year, there will be a COMDEX TV show broadcast to more than 20,000 Las Vegas hotel rooms during the show. It's to be called the Official COMDEX Television News.

CONTACT: Keith Westerman, Jason Rubin, 617/449-6600

### Microsoft/Altos UNIX Alliance

REDMOND, WA (NB)—In its bid to be the king of all the world's operating systems, Microsoft has teamed up with Altos Computer Systems of San Jose, CA to produce future versions of the UNIX operating system. Both companies have been racing to issue UNIX operating systems of their own; Altos has reportedly been winning and has the groundwork laid for a version of UNIX that runs on 80386-based systems. The agreement calls for an exchange of source code, plus joint research and development. The goal, according to Altos' spokesman Mike Sanchez, will be to come up with a UNIX operating system for a wide variety of machines that use both Intel and Motorola microprocessors. Altos' participation in this alliance assures its product of some real staying power, what with the assets of Microsoft behind it.

This is Microsoft's second o/s alliance in as many months. It just signed an agreement with 3Com to jointly develop a version of the coming OS/2 operating system which will perform in a network situation. Is Microsoft spreading itself too thin, therefore looking for outside help on its many projects? That seems to be the case.

### Atari's Solid Growth

SUNNYVALE, CA (NB)—Everybody's wondering what led to the departure of a key man at Atari recently. Atari's not saying why former IBM vet-

eran J. J. "Jerry" Brown suddenly left the firm in July. Brown was general manager of U.S. operations, assigned the task of getting Atari computers into the U.S. market. Last April when he was hired, Brown was quoted as calling himself "a Jack Tramiel groupie." Rumor has it that Brown's infatuation with the Tramiels disappeared, and he probably became disenchanted with their tight-fisted management style. Brown has refused to return phone calls, and all Atari will say is that he has departed and has already been replaced—by whom, they're not saying.

Meanwhile, Atari recorded a net income for the last quarter of \$13.5 million, up 39% from a year earlier; sales were over \$70 million (an increase of 16%), and made mostly in Europe. Profits were 19% higher after taxes. The figures reflect a modest but significant growth for the firm, prompting Stewart Alsop, author of *PC Letter*, to say, "What's most remarkable is the fat profit margins Atari is able to maintain." Atari is still operating close to the bone and has finally shed the Warner inventory of video game cartridges and old computers, now selling only new machines made in its Taiwan factory.

CONTACT: Neil Harris, ATARI, 408/745-2160

### Hypercard For The PC?

BELLEVUE, WA (NB)—Don't turn green with envy over Apple's breakthrough HyperCard software yet, PC owners. It appears that Owl International is preparing to release a PC version of HyperCard, based on its current Guide, a text retrieval program. The program will have "button" features similar to HyperCard's, and will, like HyperCard, enable text, graphics and sound to be incorporated into a single "card"; of course, the PC version will also involve the use of a mouse. Alan Boyd, president of Owl International, promises to release the software this fall. No price has been announced. And a second version which runs on the OS/2 computers, and will be able to exchange files with HyperCard on the Macintosh, is also planned.

What does Apple think of this? Owl's announcement, two days after HyperCard's introduction, reportedly took Apple execs by complete surprise. But Apple's Executive Vice President Jean-Louis Gassée quickly looked to the bright side, "It's a good indication of the interest in our product. We'd love to see it on the PC."

### Toshiba Ships New US-Made Laptop

SAN JOSE, CA (NB)—In the same week that Toshiba has lost its bid to become the laptop

supplier of the U.S. Army, the American-based subsidiary of Japanese Toshiba plans to ship the T3100/20, a 16-bit American-made version of the popular T1100 laptop, by the end of August. The Japan-made T1100 Plus, which accounted for approximately a third of all laptop sales in the U.S. prior to trade sanctions imposed against 16-bit Japanese computers earlier this year, has become a rare and expensive bird these days. Toshiba consequently has ramped up production of the new T3100s at a manufacturing facility in Irvine, California, to meet the demand for its machines and get around the restrictions and heavy tariffs on imported 16-bit computers.

The T3100/20 has a 20 megabyte hard drive and is an 80286-based laptop. Says Toshiba America spokesman Philip Vertin, "We currently are firming up plans to manufacture all our laptop products in the U.S."

### Microsoft Cracks Counterfeit Ring

EL CERRITO, CA (NB)—Armed with search warrants, U.S. Marshals swooped down on an operation which was allegedly making and selling counterfeit MS-DOS 3.2. Officers nabbed several thousand copies of the bootlegged operating system, printing plates, and other incriminating evidence from KK Graphics Printing and its proprietor K. H. Lin. Then they swept into the operation where the software was allegedly being sold, Beltron Berkeley, to haul out more copies, plus related documentation and packaging. Microsoft had obtained a federal court order in its copyright infringement action against the two firms, saying they were responsible for selling large quantities of counterfeit software to major distributors in Southern California. Also named in the complaint are Kathy Liu and Julius Liu of Beltron Berkeley. Microsoft expects to snare more people in this case.

### H-P/Sony DAT Alliance

PALO ALTO, CA (NB)—In what is probably the first venture by a computer company into the emerging DAT or digital audio field, Hewlett-Packard and Sony have formed an alliance to develop digital archival storage systems for computers. DAT has, up until now, only been mentioned in connection with the recording industry, which fears DAT technology's high quality recording capability will severely hurt compact disk, tape, and record sales. Hewlett-Packard and Sony plan DAT storage tapes for computers that will be capable of holding 1.2 gigabytes of data, including graphics.



# DIAGNOSTICS

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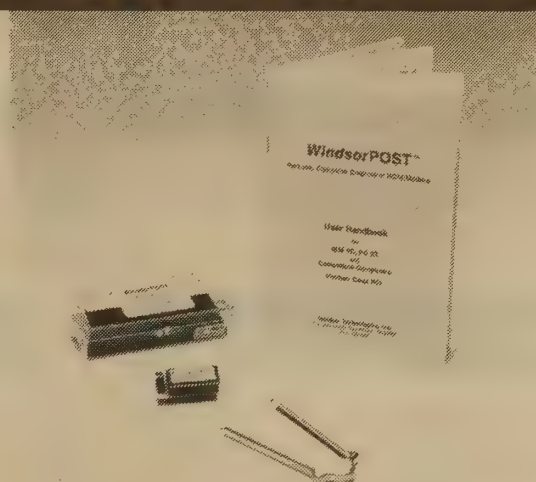
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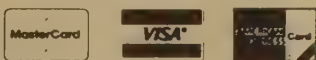
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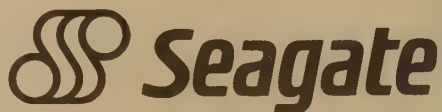
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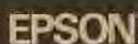
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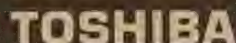
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## Mach 20 Regenerates Old PCs

REDMOND, WA (NB)—As reported previously in NEWSBYTES, Microsoft will sell a \$495 board which will enable an 8088-based PC to operate as fast, and have as much memory, as an 80286-based machine. The Mach 20 will ship September 21, says Microsoft, and sell for \$495. The board provides connections for RAM upgrades, a multimedia disk drive controller, a mouse, and other input devices. Microsoft also says the board will enable older PCs to run software based on Windows 2.0 and the coming OS/2 system.

## Software Publishing Cancels Two Desktop Packages

MOUNTAIN VIEW, CA (NB)—Software Publishing Corporation won't be shipping its PFS: Professional Write Plus word processing/desktop publishing package for PCs any time soon. And Harvard Professional Publisher has also been yanked from production as the company takes a hard look at the problems and sales figures of its software. Specifically, PFS: Pro Write Plus got a "thumbs down" response from dealers who previewed it recently, forcing Software Publishing programmers back to the drawing board. Dealers criticized the program's lack of integration between word processing and desktop publishing features, according to sources. Professional Write Plus does not have a release date.

As for the termination of the Harvard Professional Publisher, spokeswoman Valorie Cook says the high-end package could not be changed fast enough to make it competitive. She denied reports that the package, introduced in January, was not selling well. Owners of Harvard Professional Publisher can exchange it for free copies of First Publisher and Harvard Graphics.

## ComputerLand Sponsors Program

HAYWARD, CA (NB)—ComputerLand Corporation, which has been producing a television program distributed solely to its dealers, will not get into the business of public broadcasting. ComputerLand will underwrite a public television series called "Growing A Business," which will be about the trials and tribulations of making a business survive in the '80s and '90s. No dollar figure has been disclosed for the underwriting, but ComputerLand plans to capitalize upon its tax deduction by launching a promotion aimed at small and medium-sized businesses in conjunction with the show. That will include seminars for small businesses, a give-away of free copies of the book on which the series is based, and sales of video cassettes of the TV series. Hired to be the host is author Paul Hawken, who wrote "Growing A Business," as well as "The Next Economy." Hawken is also the founder of several businesses including the Smith & Hawken garden supply stores.

Bill Graves, ComputerLand's director of product marketing, told NEWSBYTES the series is aimed at entrepreneurs and would-be entrepreneurs. Computers are involved, but by no means the unique focus of the show.

KQED is producing the series, which is scheduled to air November 7 on the public television stations that pick it up.  
CONTACT: Bill Graves, COMPUTERLAND, 415/475-3116.

## Apple Acquires IBM Veteran

CUPERTINO, CA (NB)—Apple Computer has announced the appointment of Harold Copperman, a 20-year Big Blue veteran, as manager of Apple's east coast sales, support, and training group. Until recently, Copperman served as IBM's director of

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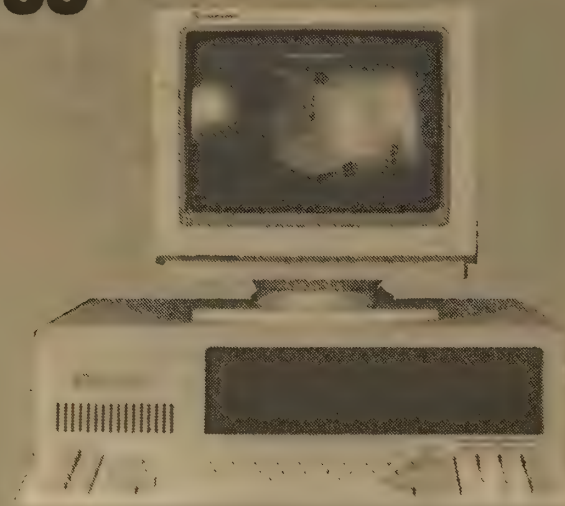
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marketing for higher education and is very experienced with the college and university marketplace. That's an important source of Apple's income and this appointment is likely to enhance it even further.

## Apple Bids For Army Contract

CUPERTINO, CA (NB) — Apple has teamed up with Magnavox to bid on an \$800 million contract to supply software and hardware for the Army's battlefield command and control system project. Apple's offer reportedly includes 18,000 Macintosh computers. Alone, Apple might have a slim chance, but teaming up with Magnavox, a large defense contractor, provides it with a better chance of success. Hewlett Packard and Unisys are also expected to bid, according to Charles Berger, VP of market development. The decision is due in the spring.

## First From NeXT?

PALO ALTO, CA (NB) — Sources report that Steve Jobs has a unique design for his firm's coming academic workstation — the machine is said to look like a jet black cube, a far cry from the Macintosh with which it's expected to compete. The design was reportedly created by Hartmut Esslinger of Frog Design in West Germany. But wait — there's more. The rumor mill tells us that the machine will have a built-in 8" speaker to blast out "extraordinary sound" capabilities, and it will have some dazzling graphics. We'll see.

## National Semi Rescues Fairchild

SAN JOSE, CA (NB) — National Semiconductor will spend an estimated \$122 million to purchase Fairchild Semiconductor Corporation, ending the year-long battle to sell the firm to Fujitsu. National Semi will make the 30-year old chipmaker a subsidiary, and consequently will become the U.S. Defense Department's largest supplier of military chips.

The acquisition will require a great deal of budget-trimming on the part of National Semiconductor, however. Fairchild has been a money-losing operation for years, having lost \$93 million in 1986. National may sell or close parts of the operation, but most likely will not do away with Fairchild's prestigious research and development center in Palo Alto.

If the merger takes effect, National Semiconductor will also become Silicon Valley's largest chipmaker, surpassing the most recent owner of that title — Advanced Micro Devices/Monolithic Memories — and will become the third largest in the nation, behind Motorola and Texas Instruments.

## Gates Predicts Mac-Like Standard

Microsoft founder Bill Gates was keynote speaker at the 5th annual PC EXPO, which drew a modest crowd in New York. Gates said the Mac-like interface of icons and pull-down windows will be standard equipment on PCs within three years. "Eighty percent of all PCs will use a graphical interface, compared to ten percent today," he told the audience of some 700 people. "This is a very dramatic change." He added that IBM's decision to equip its PS/2 series with built-in graphics boards represents an "incredible endorsement of bit-mapped graphics."

## New Workstations From AT&T

NEW YORK (NB) — AT&T has introduced two powerful new desktop microcomputers that run both UNIX and MS-DOS applications. The 6386 WorkGroup Systems, built by Olivetti, come in a



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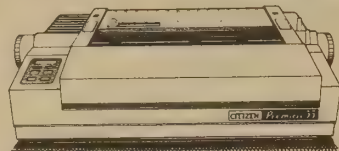


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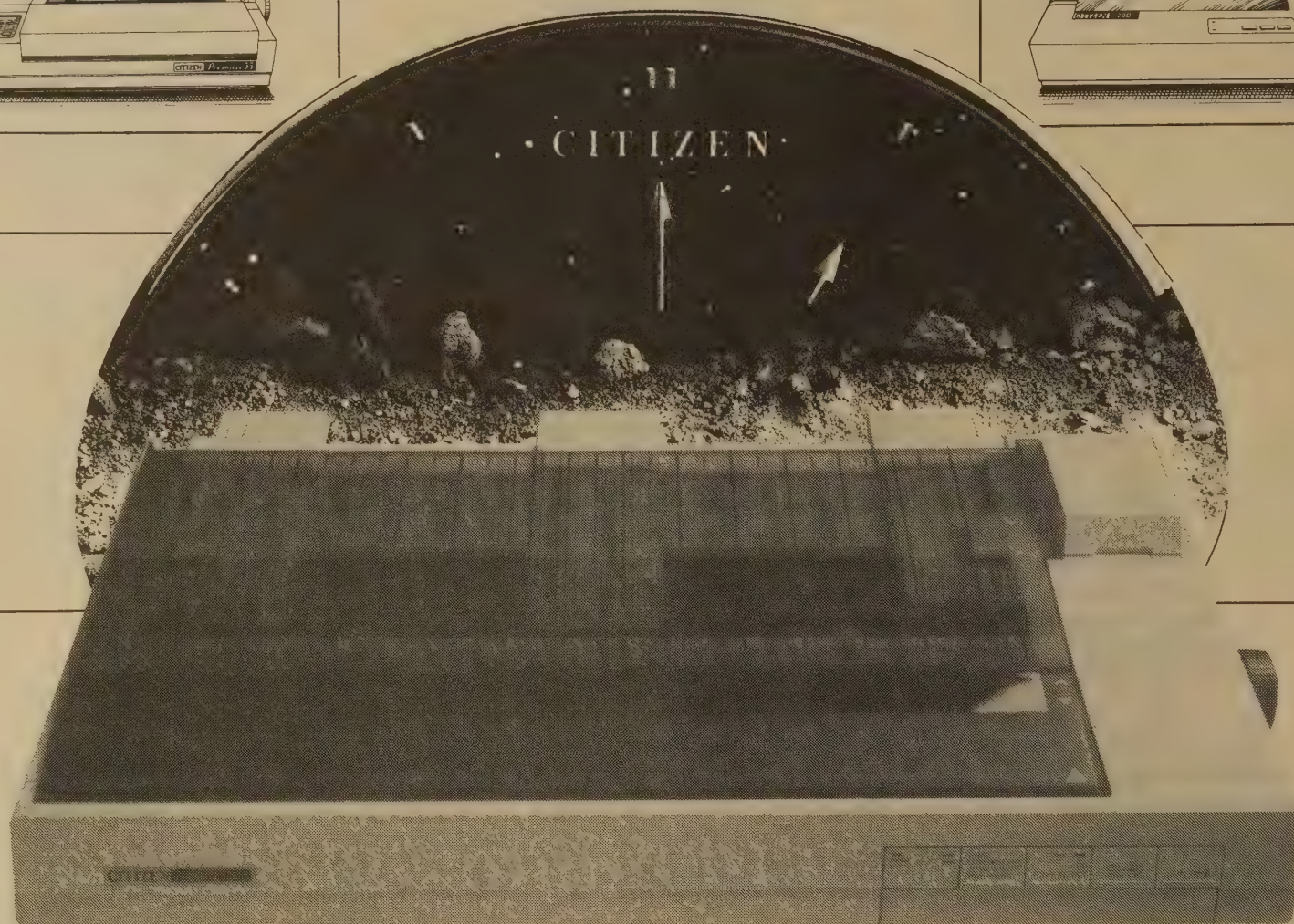
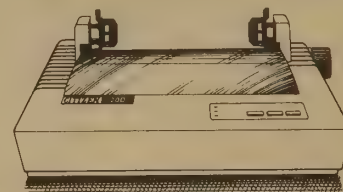
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desktop and "deskside" model. The desktop version, the 6386, has 1 megabyte of RAM, expandable to 48 megabytes. The deskside version has a basic 2 megabytes of RAM, and can support up to 64MB. Both are multiuser machines that run between \$4,800 and \$10,395.

AT&T also announced that the McDonald's hamburger chain will be its first big customer; McDonald's has purchased enough systems to supply all its 7,500 franchises. Also announced were some 38 other products, including a minicomputer, the 3B4000, capable of supporting up to 300 users simultaneously.

The announcement is significant in that AT&T has clearly decided to stay in the computer business and further promises to introduce two new machines each year for the next few years, all of which will be fully integrated with previous products.

## II Runs IBM Software—Fast

CAMPBELL, CA (NB)—The Apple IIc, IIe and IIGS may become one of the cheapest IBM clones if a Dallas company's product is a success. Designed by The Engineering Company here, the PC Transporter, to be introduced at Applefest in San Francisco September 18-20, will enable a IIc, IIe and IIGS to run "virtually 98%" of all IBM software, a spokesman told NEWSBYTES. The add-in board, which has adapters for monitors and IBM keyboard, will cost around \$500. Marketed by Applied Engineering of Dallas, Texas, the PC Transporter will also enable the II line to run IBM software three to four times faster than an IBM XT.

The IIc and IIe computers will require an IBM-type disk drive to run programs, but the IIGS' 3½-inch disk drive will run 3½" size MS-DOS 3.3 diskettes as well as Apple programs, says an Engineering Company spokesman. For more on the PC Transporter, see the current issue of A+ magazine. CONTACT: Dan Pote, APPLIED ENGINEERING, 214/241-6060.

## International Laser Parlors

SAN FRANCISCO, CA (NB)—With the advent of desktop publishing, new opportunities for side bar businesses have arisen faster than you can say "1-2-3." Specifically, the "laser parlor," a service with which you can professionally typeset your document, has sprung up across America, and its success is evident by the expansion of the Bay Area's Krishna Copy centers. Within the next two months, its four Bay Area locations will expand to nine, with franchises located in Los Angeles, Atlanta, Bakersfield, California, and Naples, Italy. Founder Sanjay Sakhuja told NEWSBYTES that unlike other "laser parlors," the Krishna chain offers high-end sophistication with output of document or disk to phototypesetters such as the \$60,000 L300.

"We started with one LaserWriter and one Macintosh computer 2½ years ago," says Sakhuja, "and now we have 30 computers, including Macintosh IIs, and seven L300s." He says the franchises will attempt to popularize the concept of desktop publishing with high visibility in major metropolitan areas.

The centers will not retain the name "Krishna" in other cities, however. The name, taken from the company's owner, "was a Berkeley phenomenon," where the Hare Krishna religious sect, with which the store has no connection, had a certain name recognition quality for the Bay Area in the '60s. "But we don't think that name will be an asset elsewhere," says Sakhuja. Other copy centers will either be called MicroPrint or The Copy Network. CONTACT: Dr. Sanjay Sakhuja, KRISHNA COPY, 415/986-6161.

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## Atari Buys Federated

SUNNYVALE, CA (NB)—Following the footsteps of Tandy Corporation, Atari will solve its distribution problems by getting into the retail business. Atari has offered to buy the 67-store Federated Group chain of electronics stores. This bold move, orchestrated by Atari's Chairman Jack Tramiel, will cost Atari an estimated \$67 million. Federated's founder has agreed to sell his shares of his financially ailing chain to Atari; Atari will make a tender offer for the 45% of outstanding shares.

The move solves on Atari problem. Still perceived as a video game company, Atari has been barred from selling its machines through ComputerLand and other major computer chain stores, and consequently has less than a third the distribution of IBM and Apple. With Federated, Atari can showcase its products prominently in the popular California and Texas-based retail stores.

Interestingly enough, the purchase has given Jack Tramiel a reason to put on a Lee Iaccoca hat and wave the banner of patriotism. He has told reporters that he wants to see fewer Japanese and more American products in his stores. "There are no consumer electronics companies today in the United States," he said. "We need to rebuild that, and I think we can do it."

Atari is also seeking to build a semiconductor and assembly plant in the U.S. Currently its computers are built in Taiwan.

## Apple Employees In Resale Scam

CUPERTINO, CA (NB)—Some 30 Apple employees have been disciplined and may be fired after allegedly taking part in a scam to resell, at a profit,

Apple equipment they bought at a discount. Apple employees are allowed to purchase computers and other Apple products far below retail cost, but are specifically prohibited from reselling the gear at a profit. That's just what happened, however, says Apple spokeswoman Barbara Krause. The employees were reselling Apple LaserWriters to an unidentified retailer at a profit of about \$500 per printer. Apple does not intend to file criminal charges against the employees, nor has stated plans to change the employee discount program.

## Apple Invests In Sybase

BERKELEY, CA (NB)—A maker of SQL-based relational database software is the latest recipient of a cache Apple has earmarked for young firms with products that can benefit the company. Apple's Strategic Investment Group, in conjunction with a list of top venture capital firms, has made a minority investment of \$3.3 million in Sybase Inc.; Apple's contribution is said to be about \$1.3 million.

Why Sybase? The firm's relational database software is seen as a necessity if networks of Macintoshes are to effectively replace the corporate mainframe or minicomputer. Relational database products take data from various computers, analyze it, and present reports. The next Sybase offering will allow networks of Macintoshes and Digital Equipment Corporation workstations to share data. Its current software enables Sun and DEC workstations to share data on a network.

CONTACT: Richard Sheffer, SYBASE, 415/548-4500.

## New Hand-Held Scanner

SUNNYVALE, CA (NB)—A small Silicon Valley start-up company has just introduced a low-cost,

hand-held scanner that inputs a wide variety of text directly into a PC. Unlike most scanners that recognize only a small number of fonts, the TransImage 1000 is said to read thousands of different fonts, including handwriting, and can input the text to a PC four times faster than the time it would take a fast typist to transcribe it. The secret is the technology. The camera "eye" of the scanner sees fonts as shapes that may not necessarily match exact patterns preprogrammed into the software. Therefore it is not stymied by variations in patterns. The TransImage 1000 is expected to sell for \$2,600, far below its nearest competitor—the \$9,950 Discover omnifont reader from Kurzweil.

## Anti-Pirate BBS

SAN MATEO, CA (NB)—Instead of providing information to your basic software pirate, a new bulletin board system plans to talk about them, and about the issues involved in the industry-wide problem of software rip-offs. System operator Bill Bennett has launched the Software Theft Opposition Project (STOP) and has converted his board to a forum for discussion of the pros and cons of the issue. Software pirates are urged to participate; their identities will remain confidential, says Bennett. The project aims to attract software executives (several staffers from Electronic Arts are already participating) and users into a public discussion, therefore clarifying the issues and increasing public awareness. If you'd like to participate, call the board at the numbers below ... to get a free copy of the group's newsletter, send a self-addressed stamped envelope to Project STOP, PO Box 3142, San Mateo, CA 94440-0142.

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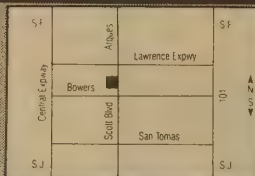
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## News From Borland

SCOTTS VALLEY, CA (NB)—Due out for sale by the end of the year, beta versions of Borland International's Sidekick Plus are finally landing in the hands of select reviewers. The program is different from the original, with new installation options, extended search and file options, nine separate text editors, nine text outliners, an expanded dialer, phone book, and telecommunication function, and more. Advance word is that the program will also be higher in price than the original—between \$100 and \$200 compared to SideKick's \$85. A second OS/2 version is expected to follow SideKick Plus' introduction.

Borland is taking on Lotus' most successful product, Lotus 1-2-3, with a spreadsheet of its own that will be half the price. Quattro, for PCs, expected to be available in the fourth quarter, is Lotus 1-2-3 compatible, and is highlighted by its "soft" user interface that can make it "look and feel" just like the Lotus original, or just about any other spreadsheet on the market. It's also said to be faster and more flexible than the Massachusetts company's product. Borland says Quattro will be available for PCs running DOS or the OS/2 system. Says Stewart Alsop of the product, "This is the first time that a major software company has taken on Lotus on its own terms—namely speed." Lotus has no comment on the Borland product, nor will say if there's any interest in a lawsuit, as it has launched against Paperback Software's competing product.

Don't hold your breath for the Quattro's release date, however. Seems Borland has missed its projected release dates with its last three announced products, Sprint, Sidekick Plus, and Eureka, for which we are still waiting.

CONTACT: Robin Shepherd, BORLAND, 408/438-8400

## Record Sales For H-P

PALO ALTO, CA (NB)—\$2.1 billion in Hewlett-Packard products were sold worldwide last year, up 14% over figures for this time last year. John Young, HP president, says the figures indicate a steady computer industry recovery and pickup in capital-equipment spending by its customers. Sales of analytical, medical, peripherals, and engineering-workstation products were particularly good, he says. Meanwhile the third in a series of six RISC-based workstations is due to go out the door by the end of August—the HP 9000 Model 8255, an entry-level minicomputer. Three more are due out by the end of the year. The 9000 series is especially important for Hewlett-Packard; years of research and development went into their production in a "make or break" gamble for the company.

## IBM Biggest R&D Spender

SAN FRANCISCO, CA (NB)—IBM spent an estimated \$3.9 billion dollars on research and development last year, earning it a place as the top spender in Electronic Business magazine's annual survey of R & D spending in the computer industry. While IBM spent the most, the share that went for research and development was only 7.8%. The firm spending the highest percentage of its income on its scientists was Advanced Micro Devices of Sunnyvale, which puts nearly 32 cents of every dollar it makes into research. Placing second and third, respectively, were Intel and GenRad. Among the recognizable names in the computer industry, Hewlett-Packard ranked 17th, Lotus got the 19th position, and Tandem Computers placed 24th among the 100 firms spending the most on research.



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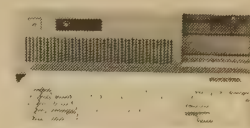
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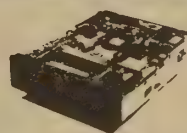
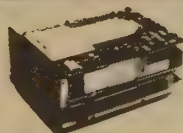
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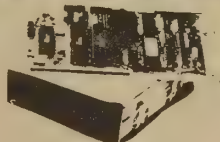
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## Priam/Xebec Disk Drive Woes

SAN JOSE, CA (NB)—Priam Corporation has officially announced that 143 workers have been given their walking shoes, and blames the layoffs on a fiercely competitive disk drive industry. Priam, maker of high-capacity, high-performance Winchester disk drives, expects more layoffs unless the balance sheets start looking better. Priam lost \$2.9 million during the last quarter despite an increase in sales. Last year, the company lost \$4.5 million.

And Carson City, Nevada-based Xebec Corporation reports a \$33.9 million loss in the last quarter, and a 66% drop in sales. The disastrous report comes in the wake of a major loss of a contract with IBM, for whom Xebec had been supplying hard disk drive controllers for the IBM PC/XT. The XT line has been discontinued. Xebec is taking emergency measures to restructure, and to sell plants in Gardnerville, Nevada and High Valley, Pennsylvania.

## Axlon Abandons TV Toys

SUNNYVALE, CA (NB)—Bailing out from a \$1.4 million loss in the last quarter and facing default on a major loan, Nolan Bushnell's Axlon, a high-tech toy company, is abandoning its "Techforce" TV show project. Axlon, in conjunction with DIC Enterprises of Encino, had been producing a children's television show, which had the controversial goal of sending radio signals to Axlon's TechForce toys in children's homes, animating them during the on-screen adventure. The controversy had some children's television advocates claiming that the TV-signals-to-toys scheme was far too commercial an enterprise for young children. Consequently, Axlon had almost no television stations lined up to take it. Axlon has written off a \$325,000 expenditure for development of the Techforce TV show, but says it still plans to ship the toys, \$250 robots, which will be controlled by a keyboard.

As for DIC Enterprises, a spokesman says there's a dispute going on over money and contracts, which may not be settled soon.

Compounding Axlon's woes was the resignation of its president in July, Austin Marshall, who decided to pursue "personal interests."

## SP's Gibbons Resigns

MOUNTAIN VIEW, CA (NB)—The man whose face is synonymous with Software Publishing Corporation is stepping down as president and CEO. The always-cheerful Fred Gibbons has relinquished his post to Janelle Bedke, the firm's co-founder, but will stay on as chairman. He's also being termed the firm's "strategist" and will be on the prowl for other firms worth acquiring. Software Publishing says Gibbons' stroke, suffered during a skiing accident two years ago, and from which he suffers some minor paralysis, is not a factor in his change of position.

## Red Ryder Goes Commercial

PHILADELPHIA—The FreeSoft Co. is switching from shareware to standard commercial marketing for its popular Red Ryder telecommunications software for the Macintosh, according to MacWEEK. Version 10.0 will be \$80, and 9.4 owners can trade up for \$20. Developer Scott Watson said one reason for the change was a new printed and bound manual that will come with the new version. Watson promises that the new Red Ryder will be a blockbuster and there are rumors about breakthroughs in handling online graphics.

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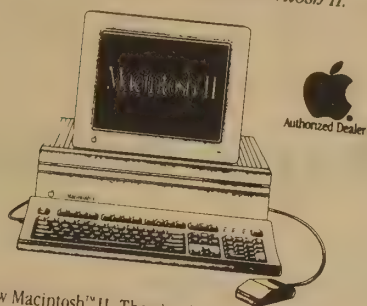
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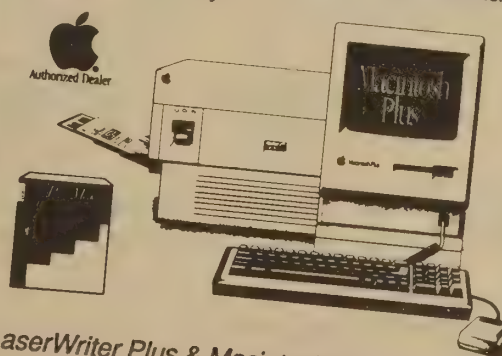
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By Dana Blankenhorn

## Novell's Mac NetWare

PROVO, UT (NB)—NEWSBYTES has learned that Novell will hold a press conference at next month's PC Expo to announce a version of NetWare for the Macintosh. The new Local Area Network (LAN) software would be released early in 1988, and compete with 3Com's 3+ for the Macintosh, released a few weeks ago. Novell's pitch until then will be that it offers connections to more minis and mainframes than 3Com, that Mac connectivity

will be here Real Soon. Now, that it has a broader product line of servers, communications boards and software, and that its stuff just works better.

Novell also has begun rolling out Version 2.1 of its flagship NetWare product. SFT NetWare 2.1 can handle up to 100 users with an 80386-based PC dedicated as a server. The software will cost \$4,695, and it can handle up to 250 users when Novell's own 68B server is used. It features better security, new facilities to account for use of the network, and new hooks for putting application programs onto the network server. It's part of an effort to consolidate six versions of NetWare into three by next year. (Limited NetWare, for 286-

based servers, and Advanced NetWare, for multiple servers, will, like the Mac product, be out Real Soon Now.)

Reporters saw the new software demonstrated at Westboro, MA. Deliveries are rumored to be delayed eight weeks.

CONTACT: Cheryl Snap, NOVELL, (801) 379-7812

## Zenith Wins \$100 Million DOD Order

GLENVIEW, IL (NB)—Zenith has won a Department of Defense contract to supply up to 90,000 PC-compatible laptops, with a winning bid of

# Newsbytes Macworld Expo Report

BOSTON (NB)—This year's MacWorld Expo was packed, attracting press, vendors, retailers, and end-users in unprecedented quantity for a Macintosh-only show. Sixty panel discussions and dozens of new products were announced, including breakthrough software from Apple itself. Keynote speaker John Sculley, Apple CEO, stressed "connectivity" in his address, saying the future of Apple is in "intrapersonal computing" in which the old mainframes are relegated to "a marvelous peripheral." The keynote address foreshadowed the products which stole the show, the HyperCard and MultiFinder from Apple. We'll start with descriptions of these products, as well as other new Apple offerings, then have briefs on new products from other companies.

■ **HYPERCARD**, described by designer and Apple Fellow Bill Atkinson as a "software engine" and a "software erector set," enables the user to create "cards" or screens, their length limited only by the memory of a machine, on which can be placed graphics, text, and sound, that can link to other "cards" via the standard Macintosh "buttons" which you click with a mouse. A "home" card can be created to help navigate through the "stacks" of cards. Demonstrated by Atkinson himself, who used Apple's internal phone book of 3,000 cards running on a Macintosh Plus, the software found the information he wanted in less than a second.

The software has five levels of increasing complexity, the highest for programming wizards, and it's physically composed of four disks, including a help disk and stack examples and stack ideas.

HyperCard is to be bundled free with all Macintoshes sold starting in August, or is available for Macintosh Plus and higher, for \$49.

Most analysts are dumbstruck by HyperCard's uniqueness. Says Tim Bajarin, analyst for Creative Strategies, "Apple's only problem is clearly describing all that HyperCard can do." Says Jan Lewis of the Palo Alto Research Group, "This is a breakthrough product that will create an entire new class of software."

Currently, several firms are working on applications for HyperCard; the Whole Earth Catalog people will release a disk-based version of the catalog, based on HyperCard software, later this year. The Voyager Company, publisher of interactive laser videodisks, has created an application which is a guide to the National Gallery of Arts videodisk, and is planning applications for videodisks on the Apollo 17 mission, the Vincent Van Gogh Collection and the Bio-Sci laser videodisks. To mention one other, Harvard University, in collaboration with Boston University and others, has started the Perseus Project, aimed at using HyperCard to catalog 100 megabytes and 10,000 images from classical Greek civilization.

Among firms planning commercial software

applications is Activision, with HyperDesk, a desktop organizer, and Business Class, a travel planning system which everything from facts about countries and cities to currency exchange rates and local customs. Data Desk International will release HyperDialer, an automatic telephone dialing device that bypasses the need for a modem by feeding tone signals, from a dialed number, directly into the phone line via the Macintosh audio port. Optical Data plans a multimedia database of still frames and motion clips in the sciences as a videodisk controller. Xiphias will offer an interactive compendium of the key events in the history of science and human innovation, interlinked via key word and hypertext techniques.

■ **MULTIFINDER**, which gets a jump on IBM's planning multitasking operating system, allows the Macintosh to run up to 30 different software programs simultaneously, without the bother of having to close a spreadsheet, for instance, before entering a word processing program. When running on a Mac equipped with the Mac 286 card from AST Research, for instance, it will allow users to run Lotus 1-2-3 under MS-DOS in a Macintosh window, then copy and paste it to a Macintosh application running in another window. MultiFinder will run on all Macs having one megabyte or higher; it will be bundled free with all Mac Plusses and higher starting September 15, and is also available retail for \$49.

■ **The IMAGEWRITER LQ printer**, \$1,399 and available in the fourth quarter of '87, is a letter-quality, wide-carriage, dot-matrix printer designed for small and medium-sized business and education customers.

■ **The APPLEFAX MODEM**, \$699, also available in the fourth quarter, will allow a Macintosh to send and receive facsimile files from standard facsimile machines.

■ **The MACINTOSH II ETHERTALK INTERFACE CARD**, \$699, will enable the high-end Macintosh II to exchange files with other computers on an Ethernet-based network. Available in the fourth quarter.

■ **The APPLE FILE EXCHANGE** translates files or documents created by an application into the format required by another application. It is to be bundled free with all Macintoshes sold, effective immediately, or it can be purchased separately as part of a System Software update.

■ The new version of AppleShare networking software, **APPLESHARE PC**, which works with the coming AppleTalk PC card, will enable the Macintosh to share files with MS-DOS PCs. Ex-

pected release date is the first quarter of 1988, and the price has not been announced.

## OTHER PRODUCTS AT MACWORLD

■ **ASHTON-TATE**, Culver City, CA, showed off dBASE Mac, which is now projected as having an August 31 ship date. It is a Macintosh version of its popular dBASE for the PC.

■ **COLBY SYSTEMS**, Fresno, CA, promises to ship its portable WalkMac in October. The 15-pound machine, \$4,999, has a configuration similar to the Macintosh Plus. The steep price is due to the fact that Colby has to cannibalize existing Macintosh Plus computers for their CPUs. Colby is not an authorized Apple VAR, or value-added-reseller.

■ **CRICKET SOFTWARE**, Malvern, PA, exhibited Pict-O-Graph, an image-processing program which manipulates and retouches 300-dpi scanner images. \$295 including a library of graphic icons. Supports LaserWriter and ImageWriter printers.

■ **LETRASET**, Paramus, New Jersey, has announced ImageStudio, which extensively manipulates gray-level information of images generated by high resolution scanners. It gives the Mac the ability to create professional graphics with camera ready output. \$495. Registered Ready-Set-Go users can purchase the program for \$75.

And speaking of Ready-Set-Go, version 4.0 was announced at the show. It has more than 80 new features, including style sheets, glossaries, and an enhanced spelling dictionary.

■ **LIVING VIDEOTEXT**, Mountain View, CA has a new color version of its MORE idea processing/presentation program, which will sell for \$295.

■ **LOTUS**, Cambridge, MA, showed a prototype version of Galaxy, a five-module integrated software package touted as the successor to Jazz, featuring spreadsheet, database, graphics, word processing, and communication functions. Unfortunately, Lotus has no ship date for the program, which is still in the Lotus programmers' suite.

■ **NANTUCKET CORPORATION**, Los Angeles, announced McMax, a dBASE-compatible relational database management system, for \$295.

■ **PROAPP INCORPORATED**, of Irvine, CA, introduced the lowest-priced large-screen Macintosh monitor to date. Measuring 14" diagonally, the EyeSaver costs only \$395.



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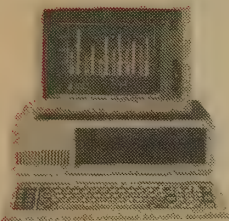
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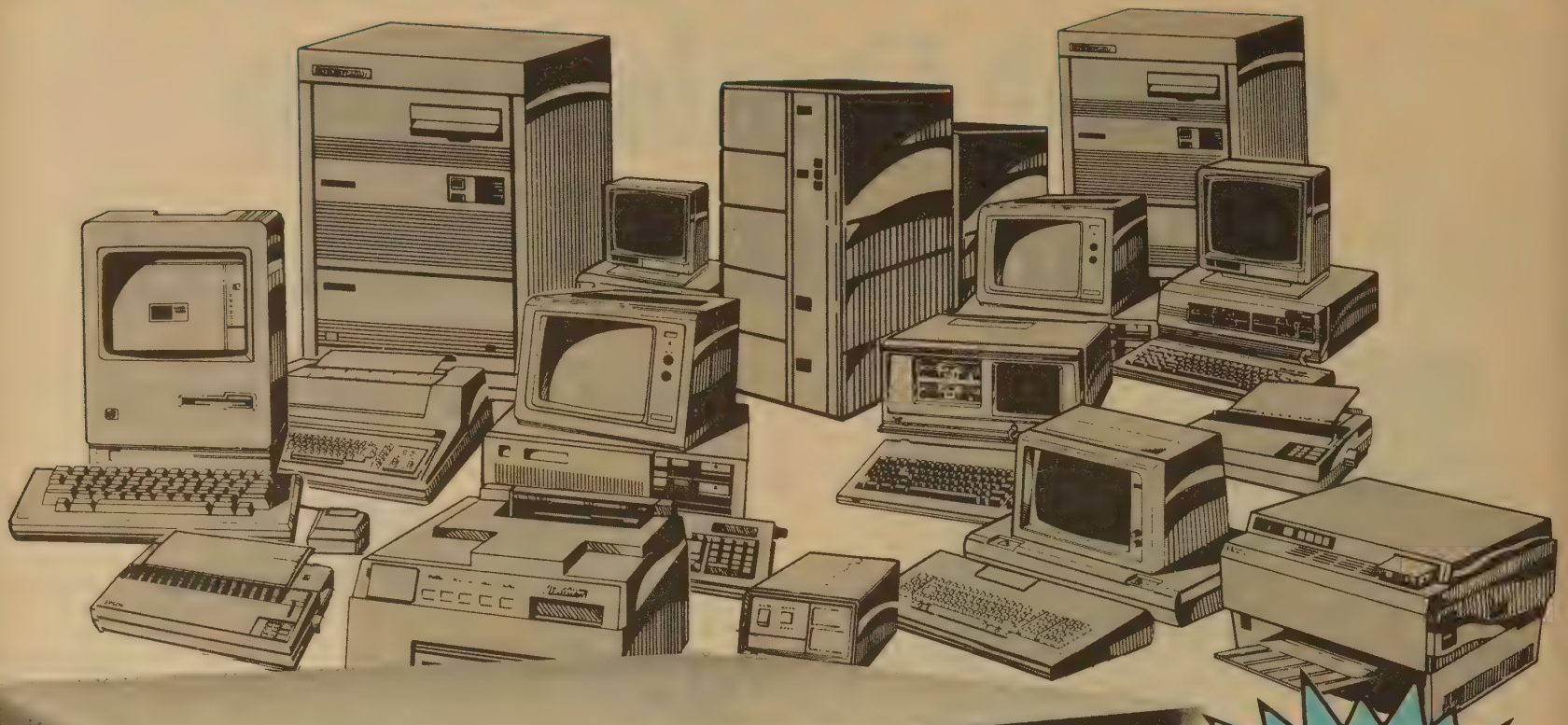
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\$104.5 million. Toshiba had been the favorite to win the contract because its T-1100 machine is lighter, but apparently the scandal over a Toshiba subsidiary's sale of submarine technology to the Soviet Union helped tip the scales, as did the huge U.S.-Japan trade deficit. ( The new contract continues a long Zenith winning streak in selling to the government; the company won a \$27 million laptop order from the Internal Revenue Service last year.

Zenith spokesman Glen Nelson admits the Z-180 is Made in Japan. They're looking at producing the product in the U.S., however.

CONTACT: Glen Nelson, ZENITH, (312) 699-4800

## LEXIS/Westlaw: The Lawsuit To Watch

DAYTON, OH (NB)—Mead Data Central, Dayton, OH, publishers of the LEXIS database, filed suit against West Publishing Co. St. Paul, MN, publishers of the WESTLAW database, on August 18, claiming federal and state courts have conspired with West to make it the exclusive publisher of their complete decisions. Mead is seeking treble damages under the Sherman Anti-Trust Act, claiming that West used profits from its paper publishing to support its online system; that it forced lawyers who wanted Westlaw to get rid of their Mead terminals, and that Westlaw uses Mead trade secrets in its formatting. Earlier, West sued Mead to prevent it from using West page numbering in Lexis. The temporary restraining order on that is still in effect.

Mead spokesman Dudley Kircher told NEWS-BYTES, "They refused to deal with competitors in providing access to the opinions and statutes of the courts. They entered into exclusive contracts with the courts and other government agencies for publication of opinions and statutes. They acquired competitors. They improperly made copyright claims on material in the public domain, and they engaged in predatory practices such as selling below cost, subsidizing that activity with their monopolistic practices in the publishing business. We doubt that a private corporation has the right to limit access to the laws by which the people are governed. This goes beyond violating anti-trust law. It's contrary to our system of government." Mead's outside counsel is the firm of Smith & Schnacke, Dayton OH.

**THE ISSUES**—Can a private company tie up exclusive rights to re-print public data? Who owns court decisions? Can a private company copyright them? Important information ownership issues will be decided by this case. It bears watching. CONTACT: Dudley Kircher, MEAD, (513) 222-6323

## New PC-MOS

ALPHARETTA, GA (NB)—The Software Link began shipping Version 1.02 of its PC-MOS/386 DOS-compatible multitasking operating system August 24. The new version supports old PCs based on the Intel 8088 and 80286 chips when they have memory management through an add-in board like the AT Gizmo, which also comes from TSL. TSL promises that your new DOS applications will run fine on its new operating system or they'll be very unhappy, moving heaven and earth to make things better.

CONTACT: Gary Robertson, THE SOFTWARE LINK, (404) 448-5465

## NEWSBYTES EAST

By Ken Maize

## Enter LIM EMS 4.0

CAMBRIDGE, Mass. (NB)—Who needs OS/2? With the new versions of the Lotus, Intel, Microsoft Expanded Memory Specification, LIM EMS 4.0,

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1-2-3 Release 3 users will be able to do everything in DOS 3.x that will be available in OS/2. That includes mammoth spreadsheets, enormous RAM disks, gobs of room for memory-resident programs, and multitasking. Release 3 of 1-2-3 is set for early next year. "Seven million Lotus users can turn to EMS 4.0 and good old DOS 3 and get all the new features of Lotus Release 3 running under OS/2," said David Reed of Lotus. Some of the 4.0 specs that will knock you off your feet: access to 32 megabytes of RAM, compatibility with the AST, Ashton-Tate, Quadram EEMS, Windows 2.

## Customs Adds Tariff To Japanese Motherboards

WASHINGTON (NB)—U.S. customs officials have expanded the 100% retaliatory tariff on Japanese computer goods to motherboards. The U.S. Customs

Service, an arm of the Treasury Department, ruled that the motherboards are finished computer products, not components. The tariffs are part of the action the U.S. took last April to punish Japan for dumping chips on the world market, undercutting U.S. chip makers. Customs also plans to hold up all imports of Japanese motherboards until agents can figure out just how much tariff to charge.

## Delphi/Ziff Talks

CAMBRIDGE, Mass. (NB)—Delphi founder Wes Kussmaul has told NEWSBYTES that officials from General Videotex and Ziff-Davis Publishing Co. have talked about selling the Delphi information service to Ziff. But Kussmaul said "you shouldn't hold your breath" about the deal, because it doesn't seem that a merger or sale is likely.

"We get a multitude of joint venture proposals," Kussmaul said.

Officials from the New York publishing giant were in Massachusetts last week to discuss a deal, Kussmaul confirmed. It is also possible that some other arrangement with Ziff is possible, he said. General Videotex and Ziff have had a close relationship for some time. Delphi originally ran on Ziff's host system, Kussmaul said, and "over the years, we kept up ongoing negotiations on combined data centers." Kussmaul said Delphi's quarters in Cambridge are not ideal for a data center, but that Ziff's data center in Burlington, MA, is first rate.

As for sale or merger with Ziff Davis, "we have these kinds of talks with various parties regularly," Kussmaul said. "We draw a lot of attention because we are one of the few profitable independents in this area. I can't say that the talk today [about Ziff] is any more real or likely than in the past."

## Clones Force Change In Export Policy

WASHINGTON (NB)—The Pentagon will end its long-held ban on the export of IBM PCs to the Soviet Union and Warsaw Pact nations. The Pentagon and the Commerce Department have been sparring over the issue for years, with the Pentagon insisting that PCs are militarily useful to the Soviets and should be banned from export as a result. But the plethora of clones from Asia, easily available to the Soviets or anyone else, finally persuaded the military that insisting on the ban was silly, according to Defense Department sources. However, 32-bit computers such as Apple's Macintosh line and the machines based on the Intel 80386 chips will continue to be verboten as exports to the Eastern Bloc. Of course, there will soon be a flood of Asian 80386s, again undercutting the Pentagon hardliners.

## Commodore: Good News, Bad News

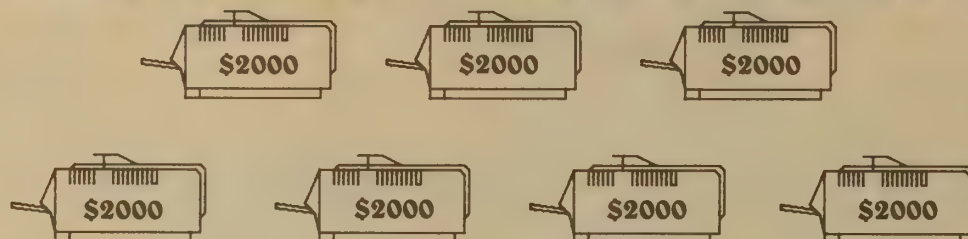
WEST CHESTER, Pa. (NB)—Commodore International Ltd. has reported profits for the year ended June 30 of \$28.6 million, or 89 cents per share, compared with a \$127.9 million loss (\$4.08 per share) for fiscal 1986. But the financial turnaround came despite lower overall sales for the year of \$806.7 million, down from \$889.3 million in 1986. Severe cost-cutting and consolidation fed the Commodore bottom line, but the company must dramatically beef up its U.S. sales to move ahead, according to Wall Street analysts. Nearly three-quarters of Commodore's sales during fiscal 1987 took place outside the U.S.

Commodore faces a very tough task. The model 64 is growing a beard, the PC-compatible line faces stiff competition from Big Blue and the other clonesters, and the impressive Amiga has yet to catch on big.

## DEC Complaint Forces Air Force Bidding Halt

WASHINGTON (NB)—The Air Force has stopped the bidding on a \$3.5 billion contract for 20,000 multiuser minicomputer systems following a complaint by Digital Equipment Corp. of Maynard, MA. DEC complained to the General Services Administration's Board of Contract Appeals that the bidding was stacked in favor of American Telephone & Telegraph. Digital complained that the bidding documents specified that the operating system for the computers be AT&T's System V Interface Definition, a UNIX variant. DEC argued that the Air Force should be looking for function, not for specific software. The Air Force initially turned DEC down, but agreed to suspend bidding

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once the company complained to GSA. A GSA administration law judge will hear Digital's complaint at a hearing in Washington September 16.

## Apollo/Boeing Deal

CHELMSFORD, Mass. (NB)—Apollo Computer Inc. has sold 40 Series 3000 engineering workstations to Boeing Computer Services for use in the NASA space station program, for a total of \$800,000, or about \$20,000 apiece. Apollo said it expects to deliver more than 400 workstations, worth more than \$6 million, under the contract. Apollo is also to provide software and support, including boards so that the workstations can run MS-DOS and Apollo's Domain environment. "This is a very significant contract for Apollo, no question about it," said Apollo spokesman Joe Nahil. NASA plans to use the Apollo Series 3000 Personal Workstations in a number of departments, including engineering applications, document management, budget planning, scheduling, and performance management, Nahil said.

## IBM's Super-Small Transistors

NEW YORK (NB)—International Business Machines Corp. has announced the development of field-effect transistors that have the highest transconductance—a measure of signal strength—of any transistor of the type. The result, said IBM, is the smallest, most powerful transistor in the world, and a major breakthrough for computer technology. IBM said the new transistors might one day make possible PCs that can recognize human speech or forecast weather. The transistors are still experimental, but IBM can be expected to push them toward the market as rapidly as possible. One problem with the new devices is that they have to be cooled to -321 degrees F. But recent supercomputer advances might overcome that

disadvantage in the future. IBM's breakthrough is expected to give field-effect transistors a leg up against bipolar transistors.

## NEWSBYTES JAPAN

By Masayuki Miyazawa and Keizo Yamamoto

### Tariff May Halt PS/2 Production

TOKYO (NB)—The U.S. Customs office recently announced that it will impose 100% import tariffs on Matsushita's central processing unit (CPU) boards, which have been supplied to IBM U.S.A. The CPU board is being made for the IBM Personal System/2 series. Apparently, IBM will get into trouble if the tax is imposed, and so will many other American computer makers, which have been getting supplies of similar CPU boards from Japan. Reportedly, the U.S. Computer Business Equipment Manufacturer Association will appeal the U.S. Customs decision and request the tariff be withdrawn.

### TI Shifts Chip Production To Korea

TOKYO (NB)—Texas Instruments (U.S.A.) has recently decided to tie up with Korea's Hyundai concerning memory ICs. With this agreement, Hyundai will produce TI's 256K dynamic RAM on an OEM basis. Currently, TI has been producing 256K DRAM at its Minura plant, Ibaragi prefecture, Japan. Reportedly, demand for the chip is high, but the company cannot meet the demand due to an export restriction order imposed by the Japanese Ministry of International Trade and Industry. So TI has decided to link with Hyundai to

produce more chips in Korea.

If that's the mentality of most of the American firms, the U.S. trade imbalance may die hard. "Unless the U.S. makers change their industry structure to produce a fundamental solution, the country might create serious trade problems with another country, following Japan," worries an analyst.

### 80386 Operating System From Intel

TOKYO (NB)—Intel Japan started shipping its new version of an operating system for its 32-bit microprocessing unit 80386 on August 20. The new version, iRMX286 release 2, has improved local area network features, powerful editing features, and many extended user facilities. CONTACT: Intel Japan, 5-6 Tokodai, Toyosato-cho, Tsukuba-gun, Ibaragi-ken 300-26

### Japanese VP-Planner Selling Like Hotcakes

TOKYO (NB)—Adam Osborne's Lotus-like low cost program VP-Planner has been doing well in Japan. In a business agreement with Osborne's Paperback Software, Inc. (CA,USA), Tokai Create has rewritten the program for the NEC PC-9801. Marketing Director Masahiko Kano of Tokai Create says that within a little over two weeks, 4,000 copies of the program were sold. And the company aims to sell 30,000 programs by the end of the year. Meanwhile, Mr. Kano hinted that Tokai Create is thinking of developing a Japanese version of VP-Expert in the near future. CONTACT: Tokai Create Co., MTC Bldg., 5-13-18 Shiba, Minato-ku, Tokyo 108, (Phone: 03-456-4611)

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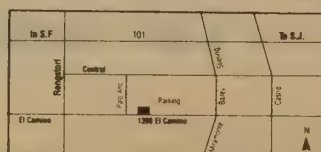
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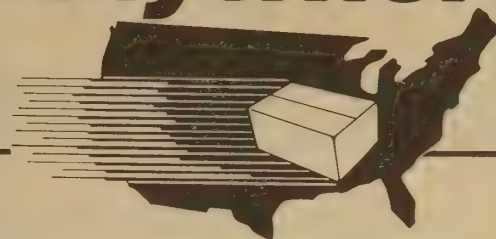
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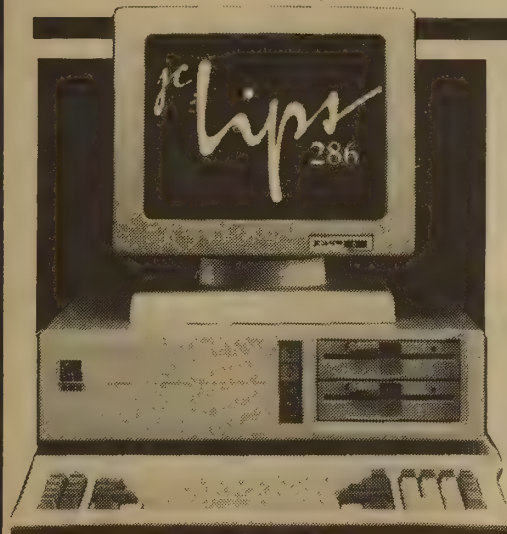
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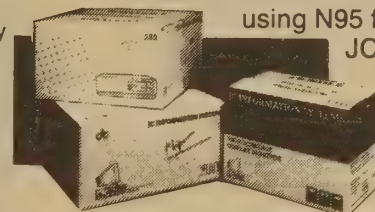
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| JC ARCNET Local Area Network Controller     | \$195 |
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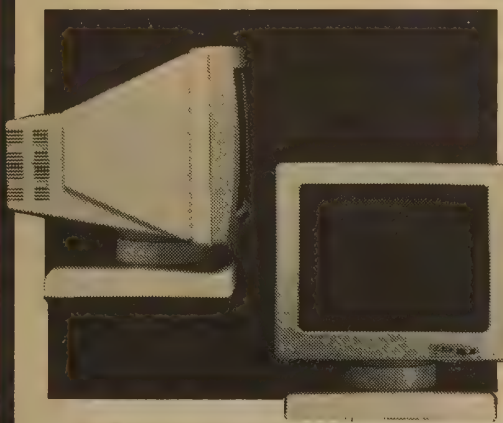
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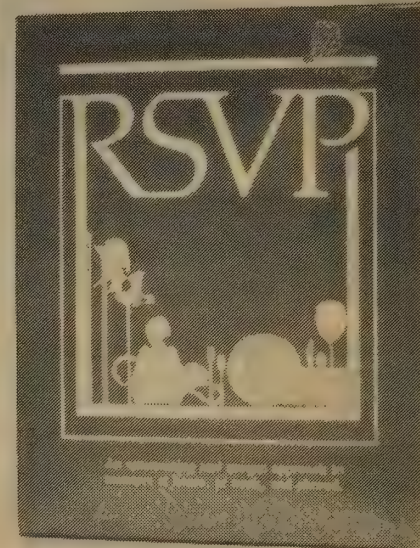


| CPU/Memory) App. Instr. WOPs Sieve Whetstone Exp-Memory MIPS Quit |                         |                 |       |       |
|-------------------------------------------------------------------|-------------------------|-----------------|-------|-------|
| MIPS TEST                                                         |                         |                 |       |       |
| System ID: SysTest05                                              |                         |                 |       |       |
| System Description: 4.77 Mhz, 20 Mb, EGA                          |                         |                 |       |       |
| CPU Description: 8088 CPU                                         |                         |                 |       |       |
| Processor Rating: .273 MIPS                                       |                         |                 |       |       |
| System ID                                                         | System Description      | CPU Description | MIPS  | FWR   |
| SysTest01                                                         | 16 Mhz with 30 Mb, EGA  | 80386 CPU       | 3.153 | 11.55 |
| SysTest02                                                         | 10 Mhz, 2 x 20 Mb & CGA | 80286 CPU       | 1.843 | 3.82  |
| SysTest03                                                         | 6 Mhz and 20 Mb, VGA    | 80286 CPU       | .626  | 2.29  |
| SysTest04                                                         | 4.77 Mhz, 10 Mb & CGA   | 8088 CPU        | .273  | 1.00  |

Messages: Press Enter to run test, a letter, cursor key, Esc, or F1 for help

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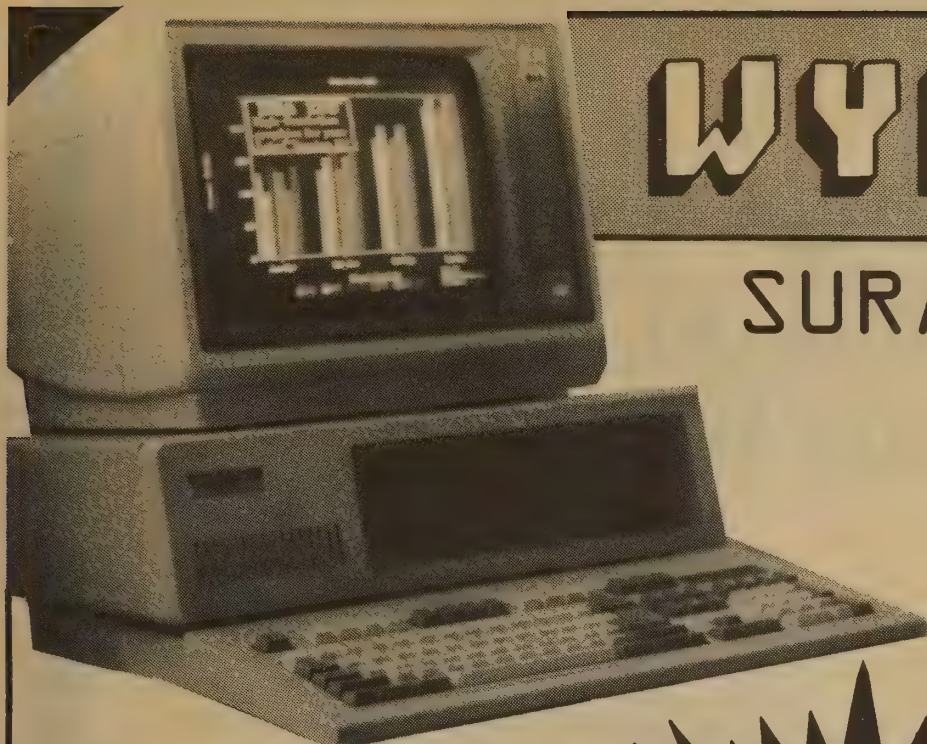
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| Main Menu) System CPU/Memory Disks Video Help Utils Quit |                 |                 |                 |
|----------------------------------------------------------|-----------------|-----------------|-----------------|
| CPU/Memory Menu = Alt-C                                  |                 |                 |                 |
| (A)ggregate CPU/Memory test                              |                 |                 |                 |
| (I)nstruction execution tests                            |                 |                 |                 |
| (N)OPs test                                              |                 |                 |                 |
| (S)ieve test                                             |                 |                 |                 |
| (W)hetstone test                                         |                 |                 |                 |
| (E)xpanded memory test                                   |                 |                 |                 |
| (M)IPS test                                              |                 |                 |                 |
| (Esc) to cancel this menu                                |                 |                 |                 |
| System                                                   | CPU/Memory      | Disks           | Video           |
| a c Aggregate                                            | Aggregate       | a cd Aggregate  | Aggregate       |
| c Spreadsheet                                            | Instructions    | c Sequent Seek  | Character Write |
| cd Word Proc.                                            | WOPs            | c Random Seek   | Line Drawing    |
| Database                                                 | Sieve           | c Data Transfer | Area Fill       |
| CAD/CAE                                                  | Whetstone       |                 | Visual Quality  |
| Program Dev.                                             | Expanded Memory |                 |                 |
| User Program                                             | MIPS            |                 |                 |

Message: Type a letter, cursor key, Enter to pull down, Esc to quit, or F1





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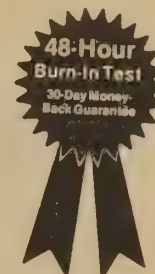
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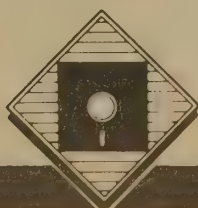
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# On The Firing Line

## FoxBASE + 2.0 — The Leader of The Pack

By Stephan Wickham  
and the Diamond Software Technical Team

**W**e at Diamond Technical have recently discovered *FoxBASE+ 2.0* from Fox Software. This program has been full of surprises. Quite clearly, *FoxBASE+* is the new leader of the pack of *dBASE III* language clones.

It is not surprising that this type of development has happened outside of Ashton-Tate. Most of the prime developers of *dBASE* products are now no longer with the company, including Wayne Ratliff (*dBASE*'s author), Jordan Brown (chief programmer, *dBASE III*), John Geiselman (chief programmer, *dBASE III PLUS*) and Brian Russell (*Clipper*'s author). One also no longer finds well-known Ashton-Tate technical people such as Tom Rettig and Bob Byers, among others.

There is currently a huge amount of activity in modifying the *dBASE* language to meet the needs dictated by a new crop of hardware, creating software that can match the performance of the new 80286 and 80386 machines. At Fox Software, Eric Christensen, William Ferguson, David Fulton and Amy Fulton have written the next generation in the *dBASE* language by coming out with *FoxBASE+*.

*FoxBASE+*'s greatest claim to fame is that it's faster than a speeding bullet, more powerful than a locomotive, and has been known to compile hundreds of thousands of lines of *dBASE III* code without flinching. Tests on the average show that *FoxBASE+* is 5.9 times faster than *dBASE III PLUS*, 3.2 times faster than *Clipper* and 4.0 times faster than *Quicksilver*. Remarkably, the 386 version of *FoxBase+* improves these figures by a factor of two.

Why is *FoxBASE+* faster than *dBASE III+* or the other clones? There are four main reasons: the screen I/O routines are written in assembly language to directly access the BIOS; there is normalization of the code during compilation; there is the use of more RAM for buffers which affect the file I/O; and there is more effective use of 8087 or 80287 coprocessors.

*FoxBase+* is best described as a "pseudocompiler," with the source code being compiled as it is loaded or precompiled. *FoxBASE+* code can be distributed to operate under a runtime module with the compiled code hiding the source code statements. But, unlike other companies' runtime applications, *FoxBASE+* runtime is quick. Fox Software has been very careful to insure that few or no changes to your program source code are necessary in moving from a *dBASE III PLUS* environment. Here at Diamond we required no changes to run our *dBASE III* code with *FoxBASE*. It is easier to convert from *dBASE III PLUS* to *FoxBASE+* than it is to convert from *dBASE II* to *dBASE III PLUS*. Interestingly, *FoxBASE+* is also able to directly read *dBASE II* files, except to create new records or modify records. *dBASE III* or *dBASE III PLUS* records require no changes.

*FoxBASE+* is extremely compatible, but it does have some omissions, none of which we believe

**FoxBASE+ has a number of interesting additions to the dBASE language. The most important of these features is the ability to have multiple concurrent relationships between data base files.**

is serious. *FoxBASE+* does not support these functions:

- ASSIST
- CREATE/MODIFY/SET VIEW
- CREATE/MODIFY/SET QUERY
- CREATE/MODIFY SCREEN
- Support for CATALOG
- IMPORT/EXPORT
- Support for .DIF, .Syk and .WKS file formats in COPY and APPEND

*FoxBASE+* has a number of interesting additions to the *dBASE* language. The most important of these features is the ability to have multiple concurrent relationships between data base files. To be defined as capable of supporting multiple relationships, a program must be able to maintain two or more files open at once without having to switch between those files. Many data base structures are best designed with more than one relationship, in order to minimize storing data more than once. A total of 48 files can be open at the same time in *FoxBASE+*, of which up to ten can be data base files and up to 21 index files. Remember to set your PC-DOS/MS-DOS CONFIG.SYS so that it has at least ten more files than what you will be using in *FoxBASE+*. Revision 2.0 of *FoxBASE+* includes more than 30 customer-requested enhancements and runs in less memory than the revision 1.x series.

*FoxBASE+* also offers error-checking while running an application, such as an "ENDIF" missing from an "IF" statement. This type of omission in *dBASE III PLUS* will return you to the dot prompt. *FoxBASE+* does not have an equivalent to *dBASE III PLUS* ASSIST or prompt-by-example modes. This might make it more difficult than *dBASE III PLUS* for a novice to learn, but over a million people learned *dBASE II* without the advantage of an ASSIST module. Most experienced data base programmers don't use aids such as ASSIST, because they are slow and get in the way of commercial programming. Power users can make use of special features such as procedure binding, multiple relationships and memory variable arrays.

*FoxBASE+ 2.0* now dynamically adjusts the al-

location of memory for buffers and program loading, which has the effect of optimizing the utilization of available memory. This change results in a significant performance gain over revision 1.21 of *FoxBASE+* with the benefit of running faster in small memory configurations. *FoxBASE+* will utilize all available conventional memory and up to 64K of LIM EMS 3.2 (expanded memory specification). This version requires 350K of memory to load.

*FoxBASE+* offers the ability to set up two-dimensional arrays. Arrays can be saved, restored and released. Array elements can be used in place of regular variables. Array elements in the same array can be of different data types. Starting with revision 2.0 a mechanism is provided for initializing entire memory variable arrays — prior to this the STORE TO command would only set the value of the first element of the array.

*FoxBASE+* handles the printer differently than *dBASE III PLUS* by directing the print output to system devices (such as PRN:, COM1:, etc.) to the BIOS rather than the RAM buffer. With this method the BIOS is called every time a character is output to check if the device is ready. If the device is not ready, *FoxBASE+* goes into a loop waiting for the device to be ready to accept the character. The number of tries is user settable from 1 to 1,000,000. The default of 6,000 retries on an 8 MHz AT takes four seconds to timeout; 16 – 20 on an 8088 PC. If the retry count is used up, then *FoxBASE+* issues an error message allowing a retry. It is important to note that no information at this point is lost to the buffer. *FoxBASE+* allows you to maintain control within the application by writing routines to handle various device timeouts using the ON ERROR statement.

*FoxBASE+* allows you to write your programs in the form of separate procedures in the form of individual .prg files and then link them all together with FOXBIND. FOXBIND automatically and swiftly gathers the .prg files into a single output file. Placement of applications within procedure files results in reduced disk directory search times and provides an easier-to-manage environment. *dBASE III PLUS* allows 32 procedures per file and *FoxBASE+* allows 128.

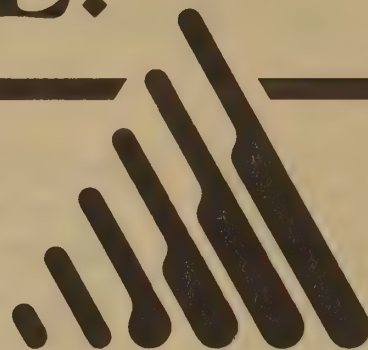
Needless to say, we have been very impressed with *FoxBASE+*. It looks like *dBASE*, but can save you time and money with its huge speed increase. *FoxBASE+* single user retails for \$395, *FoxBASE+* multi-user retails for \$595; the single-user limited runtime retails for \$300, and the unlimited runtime for \$500. Through October 30, 1987, you can purchase the single user version of *FoxBASE+* for the special price of \$215.

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# Your Vote Counts!

**MicroTimes** is now preparing its annual list of the most effective and influential people in the microcomputer industry for 1987.

The editorial staff of **MicroTimes** is asking its readers to nominate the person who they feel was the most influential in the past year. Along with this nomination **MicroTimes** is asking readers to include the names of up to ten other people in the industry that they feel have made an important impact.

You can help us by listing those people you feel deserve to be recognized for their contributions to the microcomputer world.

The people you nominate can come from any part of the industry, including, but not limited to, business people, engineers, developers or journalists.

For each person you nominate please include their full name, title or occupation and the company they work for. You may also want to include the reasons you chose to nominate this person (on a separate sheet of paper, if necessary), and we would appreciate your including a contact name and phone number for your nominee if possible. The only restriction is that for each person you nominate who works for your company, you must nominate another person who doesn't.

**The deadline for ballots is October 1st, 1987.**

This is a major opportunity to recognize the people in our industry for their hard work and their achievements during the past year. The time you take to complete a ballot will be greatly appreciated.

Thank you for your nominations

Sincerely,

The editorial staff of **MicroTimes**

Nomination for the most influential person in the microcomputer industry for 1987: \_\_\_\_\_

Nomination for the group or organization which made the most effective contribution to the microcomputer industry in 1987: \_\_\_\_\_

Nominations for the annual list of the most effective and influential people in the microcomputer industry for 1987. You may nominate up to ten people.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_

#### The Year's Worst

Nomination for the person, organization or product you believe had the greatest negative impact on the industry this year: \_\_\_\_\_

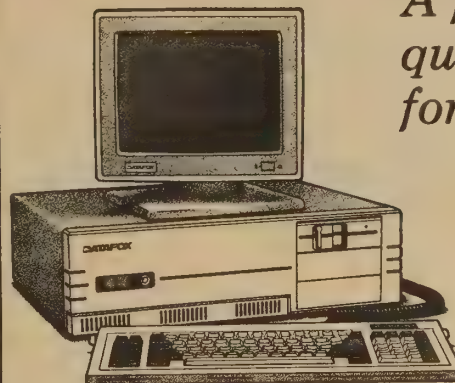
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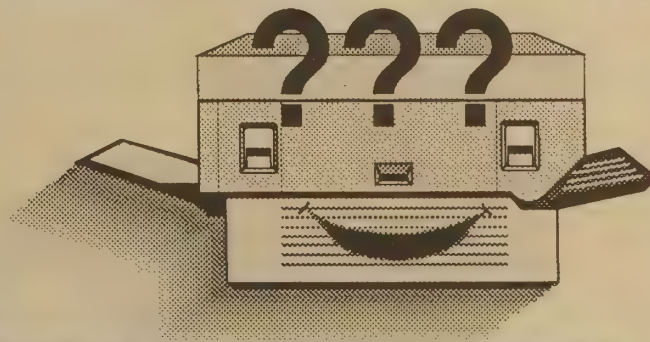
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# Toshiba in

## *The Best Of Times,*

By Jeff Spurrier

**W**hen 1987 comes to a close, you can bet the executives of Toshiba will breathe a sigh of relief. To put it mildly, it hasn't been a very good year for the giant Japanese electronics company.

In April, a series of restrictive sanctions (essentially 100% tariffs) were imposed on Toshiba and other Japanese firms, largely as a result of a charge of dumping semiconductors on the U.S. market. In June, the Toshiba Machine controversy surfaced—a little-known Toshiba offshoot was found to have sold sensitive technology to the Soviet Union. An angry U.S. Senate voted to ban Toshiba from selling finished products in the U.S. for two to five years. Hours after the Senate vote (which has yet to be finalized into law), the two top executives of Toshiba Corporation resigned their posts. Then in August, word came down from the U.S. Air Force that they had awarded a \$104.5 million laptop contract to Zenith. Prior to the Toshiba Machine controversy, Toshiba was said to be the front-runner in the 90,000-machine laptop deal.

Ironically, even as the firestorm of protectionist emotion and security concerns was raging around it, Toshiba had, for the first time in five years, finally secured a foothold in the computer market, thanks to its family of laptop machines: the T3100, the T1100, the T1100 Plus, and the newly introduced T1000. There's been a buzz about the Toshiba laptops ever since they were released last year. They're hot, they're happening, they're the first reasonably priced laptops with nearly all the kinks ironed out. Even grouchy computer pundits who have pooh-poohed the laptop concept for years have grudgingly admitted that there's little to dislike about Toshiba's offerings.

For a while this past spring, Toshiba laptops were flying out the door as soon as they arrived in the stores. Unfortunately, just as the prices were beginning to drop, that door was slammed shut by the U.S. Congress. It was a little like winning the Irish Sweepstakes the same day you've been told by your doctor you have six months to live.

Says Kazuo Ishiguro, president of the Industrial Electronics Business Sector of Toshiba America in Irvine: "[The semiconductor sanctions hurt] very much. We sold out our inventory two months ago. We had nothing to sell during June and July. We will start shipping out of our production line here [in Irvine] this month, but still the quantity is very limited. The damage we've had is very substantial."



PHOTO: ANN SUMMA

Toshiba's Dennis Eversole and Kazuo Ishiguro: Making Toshiba's US operation an Amer



# n America



## *The Worst Of Times*

And that's not even to mention the proposed Senate action aimed specifically at Toshiba.

"The Senate bill (regarding the Toshiba Machine sale) was passed June 30, and it took everybody here by surprise," says Dennis Eversole, VP of Finance and the I.E.B.S. point man for the controversy. "We weren't at all certain how to respond. Toshiba Machine is three companies removed from Toshiba America. It didn't affect our June sales, but it has affected July sales. Our sense is that there's concern and confusion."

The concern isn't just inside Toshiba. Recently a spokesman for Apple (whose ImageWriter printers come from Toshiba) spoke before a Congressional subcommittee urging a reasonable solution to the problem.

"We do business with a subsidiary of Toshiba, and a ban on their sales would have an effect on us," says Barbara Krause of Apple. "We would hope that Congress would find some way of dealing with this issue without penalizing an American company."

For some future dramatist, Toshiba's tale of woe in the American market resembles a story like the classic *Chushingura*, the Japanese feudal epic of betrayal, honor, vengeance and loyalty. While the Japanese and American executives at Toshiba's Irvine facility don't look much like the masterless samurai of the *Chushingura*, one does note a certain sense of stoic determination in the face of a perceived unjust fate.

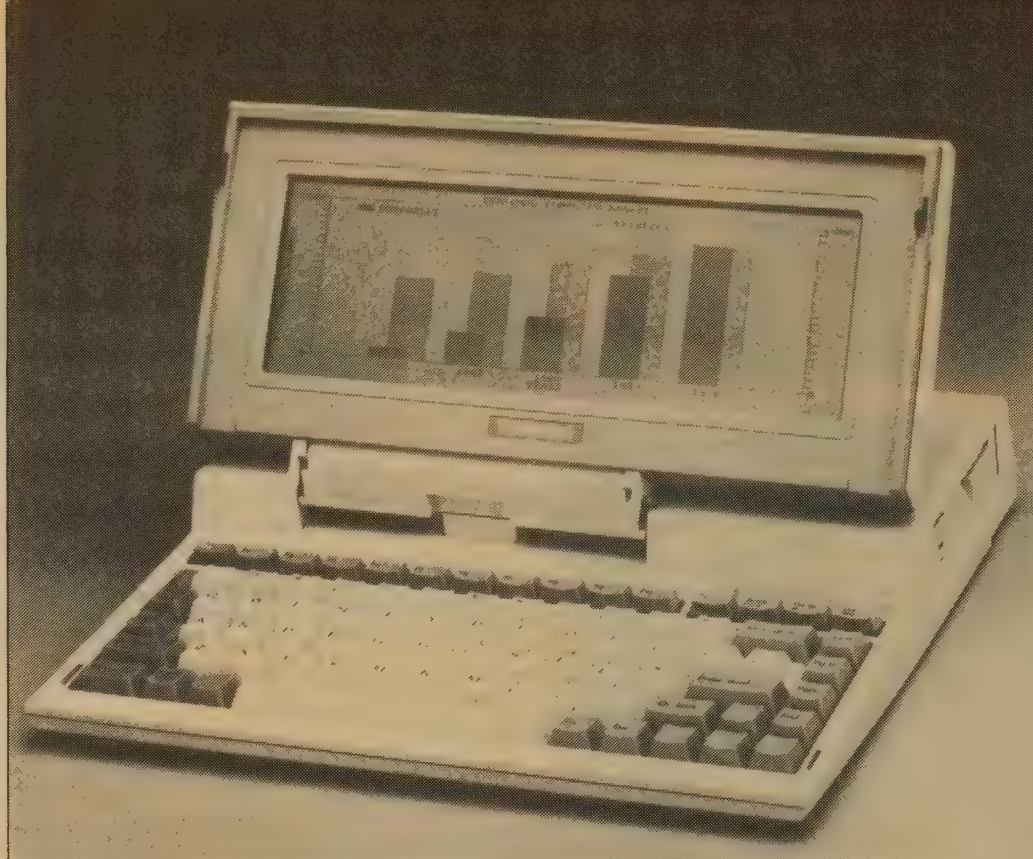
Considering Toshiba's history in the U.S. computer market, it's surprising that the company has a presence here at all. Five years ago, when IBM was starting to ship its original PC, Toshiba introduced its first personal computer, a CP/M-based machine with no color and no graphics. To no one's amazement, it performed miserably in the marketplace.

"When we came in with our CP/M machine, we had a feeling that the first entry would not be successful," says Ishiguro with a laugh. "That was foreseen to some extent."

"But not to worry," says Daniel Crane, the VP of Marketing in the Information Systems Division of Toshiba. "We were planning a color graphics CP/M machine (the T100). Again, not to worry. We had the T300, an 8088 MS-DOS machine."

"We were among the people who learned via CP/M that the operating system's place in life is to let the hardware get differentiated, and to be





The Toshiba T1000 is a compact, light-weight 80C88-based laptop whose 8-bit architecture enables it to avoid the import ban on 16-bit machines.

*Toshiba's Dennis Eversole:*

We had a strategy to carve out our own marketplace and what we ended up doing was **CREATING** a marketplace—laptops.”

the link between the differentiated hardware and the various pieces of software. We learned that. Bill Gates drummed it into us when he was running around selling MS-DOS. He convinced us and 15 other Japanese PC companies, and 100 American PC companies that are nonexistent today, that all the compatibility you'll ever need is MS-DOS and GW BASIC.”

The T300 was indeed different from other MS-DOS machines of its day. When it was introduced at COMDEX in 1983 it had a 640 x 500 screen, any dot any color, quad density disk drives, a 6MHz processor and a wide keyboard. Had it come out a few years later, it might have made as big a splash as the Leading Edge; however, at the time it was too different, too soon.

“(The T300) was very much on the right track in that the essence the manufacturer should try to capture is the ability to run the key software,” says Crane in his slow Alabama drawl. “But the market was very restrictive and confused, and people had nothing to latch onto in those early days. There was a norm of clone compatibility. If you weren't a pure clone and you couldn't run key benchmark products (like Flight Simulator or MS-DOS) or you couldn't lay an IBM template over the keyboard, a product was declared incompatible. They really steered the market towards some very restrictive thought.”

Having been burned by its first few attempts in the U.S. computer market, Toshiba backed away, Crane adds.

“We all charged off in the wrong direction philosophically, following conventional wisdom that turned out to be wrong for what the market was at that time,” he says. “And when it came time to fix the T300, we didn't. I had a couple of engineers lined up to re-do the video, re-do the BIOS, and make it a clone. But we judged the window was closing. That was in 1984—a long, long time ago.

“I think the same thought process was represented in all the big Japanese companies. First everybody charged off in the wrong direction, and then everybody incorrectly judged that the window was closing.”

The fact that so many of the Japanese computer makers misjudged the American market is predictable to some degree. Personal computers have not had as much popularity in Japan as they have had here.

“The Japanese are still using office type computers rather than personal computers,” notes Ishiguro. “We have lots of word processors because we need bigger dictionaries. We have kanji (Chinese ideographs), hiragana (a Japanese syllabary), katakana (a foreign-word syllabary), and romanji (the Roman alphabet), so we need bigger dictionaries and lots of convergence. Dedicated word processors are the number one essential for people, and then on top of that we need computers. If you look at an office in Japan, we have a computer corner. In this country you have computers on individual desks.”

**I**t wasn't just the impression that the clone market was over that influenced Toshiba's decision not to make a “me-too” machine. According to Ishiguro: “We saw a lot of people coming in with fantastic machines with fantastic prices, and we thought with just a 100% copy of an IBM we couldn't be successful. We couldn't compete with the prices the clone makers were giving.”

So three years ago Toshiba's product planners went back to the drawing board in a very fundamental way. The result was the Toshiba laptop series, the dominant player in a market that many industry analysts had labeled as dead. In 1985, fewer than 200,000 laptops were sold. This year, the projected sales are expected to nearly triple that. Prior to the sanctions, Toshiba was estimated to have garnered over 50% of the market. And considering the small size, high quality, and impressive power of the Toshiba laptops, their success is not surprising. Computer reviewers raved about the Toshiba's, customers clamored for fast delivery, and retailers found they were stocking a product that sold itself. It was simply a matter of being in the right place at the right time with the right product, says Crane.

“If we had tried to introduce the exact same machine in 1983, it would have failed in the market,” he says. “It would have been declared incompatible, because the market was very concerned with the clone element of compatibility. Now the market is sophisticated and relaxed, and



# WE APPEAL TO THE CONGRESS OF THE UNITED STATES, PRESIDENT REAGAN, THE DIET OF JAPAN, PRIME MINISTER NAKASONE AND THE NEW PRESIDENT OF TOSHIBA, JAPAN!

We commend the swift action of the Senate of the United States by a vote of 98-2 to punish Toshiba for selling technology to the Soviet Union. But we respectfully suggest that all punishments should be corrective, constructive, compassionate, compensatory, and carefully designed to punish and deter the wrongdoer and justly compensate the victim. No doubt that Toshiba's sale of advanced computer technology harmed the people of the free world. The ban of Toshiba state-of-the-art technology and products will harm us—the people of the United States. The service, warranty, support and availability of parts to the existing Toshiba equipment in the U.S. will no doubt suffer.

## LET'S BE PRACTICAL AND COMPASSIONATE!

**We suggest the following punishment:** Toshiba should immediately establish a charitable trust fund with an initial contribution of \$1.7 billion and contribute at least 75% of profits from its U.S. operations during the first year, 50% during the second year, 25% during the third year, 15% during the fourth year, and 10% during the fifth year. The suggested trust fund should be managed by trustees appointed by the Congress and the President of the United States to spend the money to:

- Help the hungry, poor, handicapped, homeless, and the underprivileged people of the U.S. and the free world.
- Help free Russian Jews from persecution in the U.S.S.R.
- Help Afghan refugees in Pakistan.
- Help the families/survivors of the Union Carbide disaster in India.
- Fight drugs, alcohol, cancer and other diseases.
- Help all charitable and humanitarian organizations in the U.S. and the free world.
- Education and medical care for poor and indigent persons, to name a few.

The above is not intended to be a comprehensive, all inclusive list of where Toshiba's contribution should be spent. These are just a few examples for reference purposes only.

The funds should be paid to the most needy—rather than by allocation or appropriation. If our readers agree with any of the above suggestions, please write to your **Congressperson, Senator, President of the United States and President of Toshiba, Japan.**

**We appeal to the President of Toshiba to make a good faith gesture and immediately establish the \$1.7 billion charitable trust fund without waiting for Congress and the President to decide one way or the other. \$1.7 billion is not even a drop in the ocean of Toshiba profits from over \$85,000,000,000 (that's \$85 billion) sales! You owe it to the people of the free world! It's time to act! And act swiftly!! Please do not procrastinate!**

## JUSTICE DELAYED IS JUSTICE DENIED!

We respect Toshiba's statement of their position recently published in the national media. However, explanations, regrets, resignations, and apologies **alone** cannot undo the harm that has been done to the free world.

*Note to our readers:* Thank you for the very encouraging response to this ad. We have sent Facsimilies to the President and the Chairman of Toshiba in Japan and have not heard from them as of press time.

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**"We learned from the T1100 and our printer experience that the marketplace puts a value on simplicity of configuration. We said 'Can we make these things as easy to sell as printers, where people don't have to worry about optional this and optional that, slots for this and slots for that?'"**

it understands the issues. I've got to be able to run the generic software, but beyond that I don't need a lot in clone-ism."

"Our strategy was that we wanted some uniqueness," says Eversole. "What we focused on is a very high performance, high quality machine with a very small footprint. We started calling it a 'miniature desktop,' because it appeals to people who can afford a high quality machine. Our T3100 line (a 12" x 14", 15-pound AT-compatible machine with a gas plasma display and an initial list price of over \$4,000) is not very sensitive to price. People that buy it can afford it and want that small footprint, the portability and the speed.

"[The desktop market] has been dominated by IBM. It's a very difficult market to enter, and given the fact that we weren't successful with our first machine, we were somewhat shy and spent a lot of time thinking out our next product. And that speaks for itself. It was right on the money with a market that didn't exist, and also it didn't challenge IBM."

IBM wasn't likely to see Toshiba as a serious challenge. IBM's Convertible was an indication of how seriously Big Blue took the laptop market. But if there's one thing the Japanese have excelled at over the last 2,000 years, it's refining imported technology into highly attractive, well-made, compact packages. For Toshiba the design of the perfect laptop could be summed up as *kei-haku-tan-sho*—light-thin-short-small. Compared to the boxy "luggables" produced by other portable computer makers, the Toshiba looked like a dream come true.

And obviously a lot of American users had the same dream. Earlier this year, the T3100 was outselling the IBM Convertible by a factor of five to one. Nearly 40,000 T3100s and a like number of T1100s have been sold so far. And the T1000 is expected to perform even better. The popularity of the Toshiba laptop line surprised a lot of people—including some Toshiba executives.

"We thought we would be successful, but not to this extent," says Ishiguro. "Compared to the AT compatible desktop, the 3100 is a very clean, very compact machine. But I personally thought the price was a little higher than people expected."

"I think we underestimated how popular the [laptop line] was going to be," adds Eversole. "But we did have a strategy to carve out our own marketplace and what we ended up doing was creating a marketplace—laptops. The success has

been phenomenal. There's not enough product to fill demand."

Much of the reason for the bottleneck in the supply line, of course, stems from the sanctions now in effect. That problem does not exist for the company's latest laptop entry—the T1000. This scaled-down version of the T1100 weighs in at less than seven pounds, has DOS 2.11 on ROM, 512K of RAM, a 760K 3.5" drive, five hours of battery life, a 25 x 80 supertwist LCD screen, and a 80C88 processor running at 4.77MHz. At first glance, except for the 512K RAM limitation (which can be boosted to 640K with the addition of an optional EMS board), the T1000 appears to be the laptop that journalists, students and traveling businessmen-on-a-budget have longed for.

"We learned from the T1100 and our printer experience that the marketplace puts a value on simplicity of configuration," says Crane. "We said 'Can we make these things as easy to sell as printers, where people don't have to worry about optional this and optional that, slots for this and slots for that?' So we put all the ports on it (RGB, composite video, parallel, serial, external floppy drive), a ton of memory and made the thing ready to run right out of the box."

But most importantly (at least from Toshiba's standpoint), the machine's 8-bit bus configuration falls outside the restrictions imposed by the semiconductor sanctions. That's not the case with the rest of the laptop line. The trade restrictions prompted Toshiba to speed up plans to manufacture its higher end machines at the Irvine facility, starting off in June with a run of its T3100/20 laptops (a T3100 with a 20 meg hard drive and a list price of \$4699). Should demand warrant it, the line could produce up to 5,000 units a month. And that's not all that could be coming out of Irvine in the future—if Toshiba is allowed to quietly settle back into the woodwork and get back to business.

"If you look under the roof of this building, you'd see we've got copiers, telecom systems, computers and peripherals, and that's what the Japanese dream of—office automation," says Crane. "Toshiba is set up on an organizational level so that if this office automation thing comes to pass, there will be some kind of magic machine that everyone has in their office, that integrates all those technologies in a way that is just super for the user. Then the market will move towards a more solution oriented, turnkey type approach."

**W**hile the decision by Toshiba to start up an assembly line in America was obviously influenced by the Congress' actions, according to Ishiguro, the move to manufacture hardware within the U.S. has been part of Toshiba's long-range plans for some time. And it's not simply a way to avoid legal restrictions. In a style that is typically Japanese, he doesn't want people to buy Toshiba products just because they're well-made. He wants them to look for the Toshiba name because they love it.

"We'd like to build core equity in the major marketplaces, in the U.S., and in Europe," he says. "These core [organizations] will be more autonomous and more independent from the parent company as far as operations are concerned. If people in the major markets feel more comfortable seeing the products—even with a Japanese brand name—made in the U.S., engineered by Americans, produced by Americans and supported by Americans, that would be more attractive than the straight importing of products. In order for a product to be successful here, it needs to be very strong, and at the same time the business should be run [for the benefit] of the people living here."

"We've got to have lots of people who participate in many aspects of the business—not only sales and service, but also R&D, manufacturing, and financing. In the computer business we are hiring people in R&D and software. This creates a business that is more Americanized, and so we can share a common concept with our American employees and the American businessmen who use our products. Like any American company, I want [Toshiba] to be loved by customers, by our workers, and by investors."

Such a personal approach has worked for other Japanese manufacturers in the electronics industry, but until now, the "love me, love my machine" stance has not been too significant in a clone marketplace often more characterized by a love of the quick sale than a commitment to customer support. For Ishiguro and Toshiba, compatibility is not limited to inanimate machines.

"(Being) compatible with many kinds of machines is essential," says Ishiguro. "It's not just the superiority of the hardware. We've got to have access to other computers, peripherals and software. To do this we have to have our residence as a very good citizen in the industry, so people can recognize us as well as our machines." □



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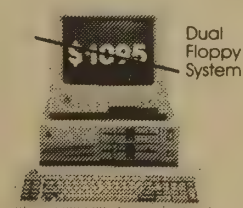
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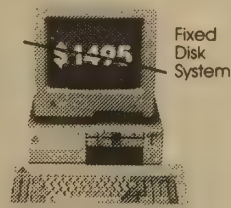
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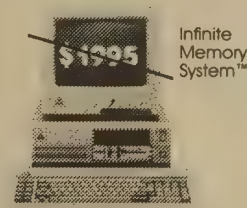
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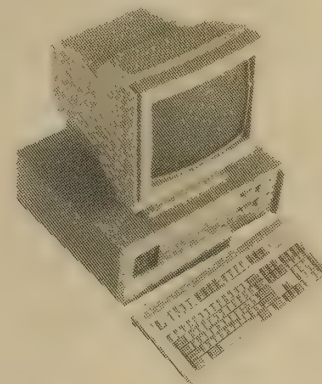
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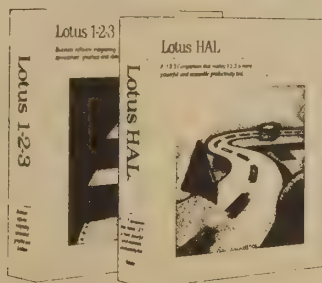
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# TYMNET



Tymnet is a packet-switched data communications network that provides access to large data bases through local telephone lines. Among its many services Tymnet allows two dissimilar devices, that wouldn't ordinarily be able to communicate, to talk to each other.

## Business Communications Adapting To Changing Times

By Robert Beauchamp

**I**n the early 1980s Tymnet dodged a bullet. The personal computer market had grown and many people discovered that they no longer needed to access mainframes. This was bad news for Tymnet's parent company Tymshare, as the timesharing business became less and less profitable.

Back in the days before PCs, the people at Tymshare were the ones that had the idea of buying their own mainframe and renting time on it. By the middle and late '70s, Tymshare had experienced phenomenal growth and had become a massive company.

Tymnet was developed so users could access the Tymshare computers over the telephone. However, by the time Tymshare began to see its market dwindling, Tymnet had developed into more than just a server, offering its customers its own applications and services.

In 1984, McDonnell-Douglas, of aircraft manufacturing fame, bought Tymshare to add to its ever-expanding information systems division. Although Tymshare still had a part to play, it was Tymnet that had caught McDonnell-Douglas' eye. Tymnet was profitable and popular, and was offering businesses online database access solutions at an affordable price.

### The FCC Threat

This year another crisis looms which might do to Tymnet what the PC did to its parent. The FCC is proposing that online access charges be raised for long distance communication using packet-switched networks. Much of the focus of the battle with the FCC has been over how the rising cost of telecommunications will affect individual users on home computers. In the case of Tymnet, however, it will be the businesses that make up the majority of Tymnet's customers that will suffer.

According to Don Parkman, public relations coordinator for Tymnet, the FCC ruling would make costs prohibitive and create a "difficult situation" for Tymnet and other network systems. Tymnet is doing its best to dodge this bullet.

### Tymnet Services

Tymnet is a packet-switched data communication network. Its basic service is providing access to large databases through local telephone lines. Tymnet provides local access to over 650 cities nationwide. It also has an extensive international service that provides access to 65 countries. This is very important to the business user who has multiple remote locations which need to com-

municate with one another. This way the business does not have to string lease lines or use WATS or even regular long distance. It is far more economical to make a local call and hook up to the computer on the network.

According to Parkman, "A network is basically a large capital investment that we make so you don't have to. We've put into place this gigantic network. Think of the office down the hall with the local area network: maybe five or six PCs are on it, they are all hooked together, and they can talk to one another. Now magnify that 10,000 times. That's what we provide people. They don't have to go out and spend the money to hook up all this stuff. They just pay a low monthly fee. They can have us manage it, take care of all the problems, use our advanced technology and save themselves headaches and money in the process."

Tymnet is useful not only for those in remote locations but also for those in central locations trying to access information in places where they can't afford to put personnel, a process known as outdial. Parkman describes it this way, "You can do outdial if you were to have a remote PC out in the wilderness and you needed to talk to it once a week.

Say it was monitoring a pump-house. You need to flow information from your mainframe which would control that thing. How could you do that if you didn't have a person out there with a PC?

"What you can do is dial into the Tymnet city nearest to that PC. The node on the network at that point can be instructed to call out to that PC. With an auto answer modem on the PC, it will connect up and you'll be able to exchange information. What that does is save you from having to hook up a lease line out to this remote location."

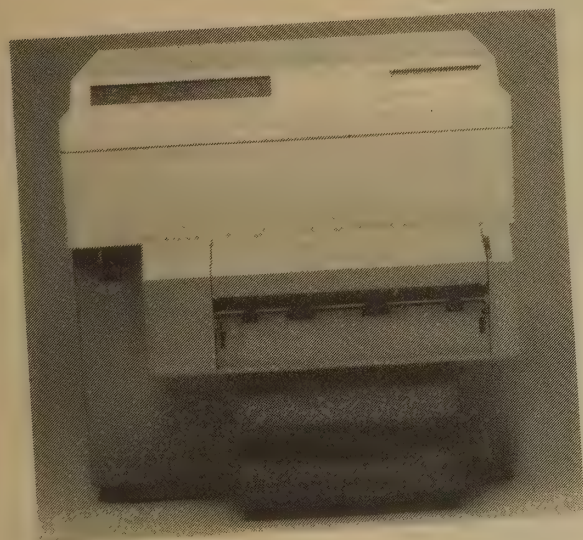
Tymnet is useful to those businesses that want to manage their own networks as well. If a business has a large enough data requirement to justify some financial outlay in the beginning, it will save itself access or connect time charges along with other online charges later. This also allows the business to manage the data in the way it wants. Tymnet will, however, provide network management for those that desire it.

Along with servicing the needs of businesses directly, Tymnet serves businesses indirectly. You don't have to be a customer of Tymnet to take advantage of it. Many of Tymnet's customers provide database and timesharing services that other



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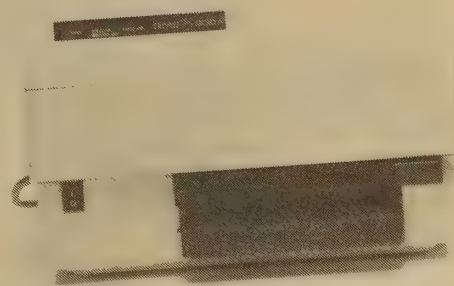


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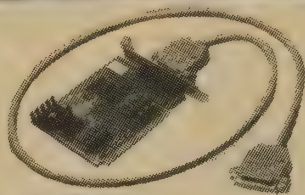
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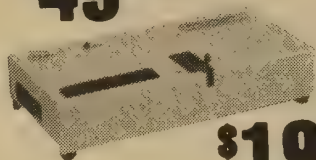
# PROGRAMMING TOOLS FOR EPROM, PAL, BIPOLAR 8748, 8751, IC TESTER



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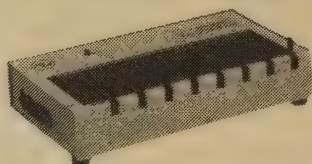
- The PC based programming tools are very economical to own, easy to operate and easy to expand.
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## PAL Programmer (PAP-01)

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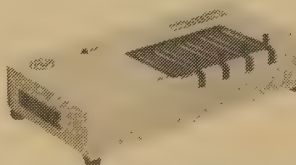
- Manufacturers: MMI, NS, TI and Signetics.
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- Short circuit protection.



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- FAST: 16 sec only for 8749.
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**“What we’re basically doing is taking people with vastly different equipment and needs and providing them with a service that can be molded to their particular situation.”**

—Tymnet’s Don Parkman

individuals and businesses can access. They include such areas as accounting, law, investments, bulletin boards and sports. There are thousands of databases and services connected up to the network. The person interested in using one of these services gets a password from the service provider which accesses the host. Tymnet keeps track of the traffic and gives the provider a full detailed billing report. The service provider then bills those people who use the service. To the user, Tymnet is virtually transparent.

Among the online services a user can access on Tymnet is the Electronic University Network, run by TeleLearning Inc. EUN uses telecommunications technology to enhance traditional continuing education programs. EUN serves as a telecommunications link between students and various accredited colleges and universities throughout the country. The students can take graduate level courses in business, as well as undergraduate courses in the liberal arts and sciences. Students work at their own pace any time of the day. University and college credits are awarded.

Tymnet provides a number of value added features for its customers. Included among these are electronic mail, error detection and correction, protocol conversion and data security.

Protocol conversion on Tymnet allows two dissimilar devices that wouldn’t ordinarily be able to communicate to talk to one another. This is especially important for those who have IBM mainframes hooked onto the system. You need an IBM terminal to speak one to one with the mainframe. One of these terminals, a 3270 for example, could cost as much as \$10,000. Tymnet’s protocol conversion allows the customer to purchase asynchronous terminals for around \$5-600, and Tymnet converts them to 3270 emulation. Parkman states that “We can support any computer you can think of.”

He explains, “When you’re on your PC and using SmartCom or Crosstalk, you’re using asynchronous communication. There are plenty of people out there who are using things that don’t talk async.

There’s x25, for example, which is synchronous communication and is actually the CCITT recommendation for packet switching. That is something we can handle on either a dedicated or dial-in basis. What we’re basically doing is taking people with vastly different equipment and needs and providing them with a service that can be molded to their particular situation.”

A major issue in telecommunications today is data security. Tymnet addresses this in a number of ways. Parkman maintains that Tymnet’s data is among the most secure available. Tymnet offers password protection into the network and monitors logins. If someone tries to log in three times, the system drops them. This way random number generators are rendered useless.

Tymnet also has a unique system of packetizing data. This method combines data from more than one customer into a single packet. This, according to Parkman, makes decoding and decryption of that data virtually impossible.

It is the variety of protocol conversion, data security and customer service that Parkman believes sets Tymnet off from its competitors. One of the best ways a potential user of Tymnet can get acquainted with the network is to dial in to the free informational database Tymnet provides. In this database are lists of all the database and timesharing services available on Tymnet, local access numbers, certified products and sales office information. Interested users can call (800) 336-0149 to find out the access number in their area.

## The Future

Tymnet’s immediate future is uncertain. Tymnet has been growing continually, and Parkman says that there always has to be expansion in this industry as well as innovation. Tymnet has grown as customer demand has warranted. He predicts that Tymnet will be hit very hard if the FCC plan to raise long distance access charges goes through. “We are faced,” he says, “with a crisis with the FCC levying access fees. It wouldn’t be a good thing, and obviously we’re taking major steps to defeat it.” □





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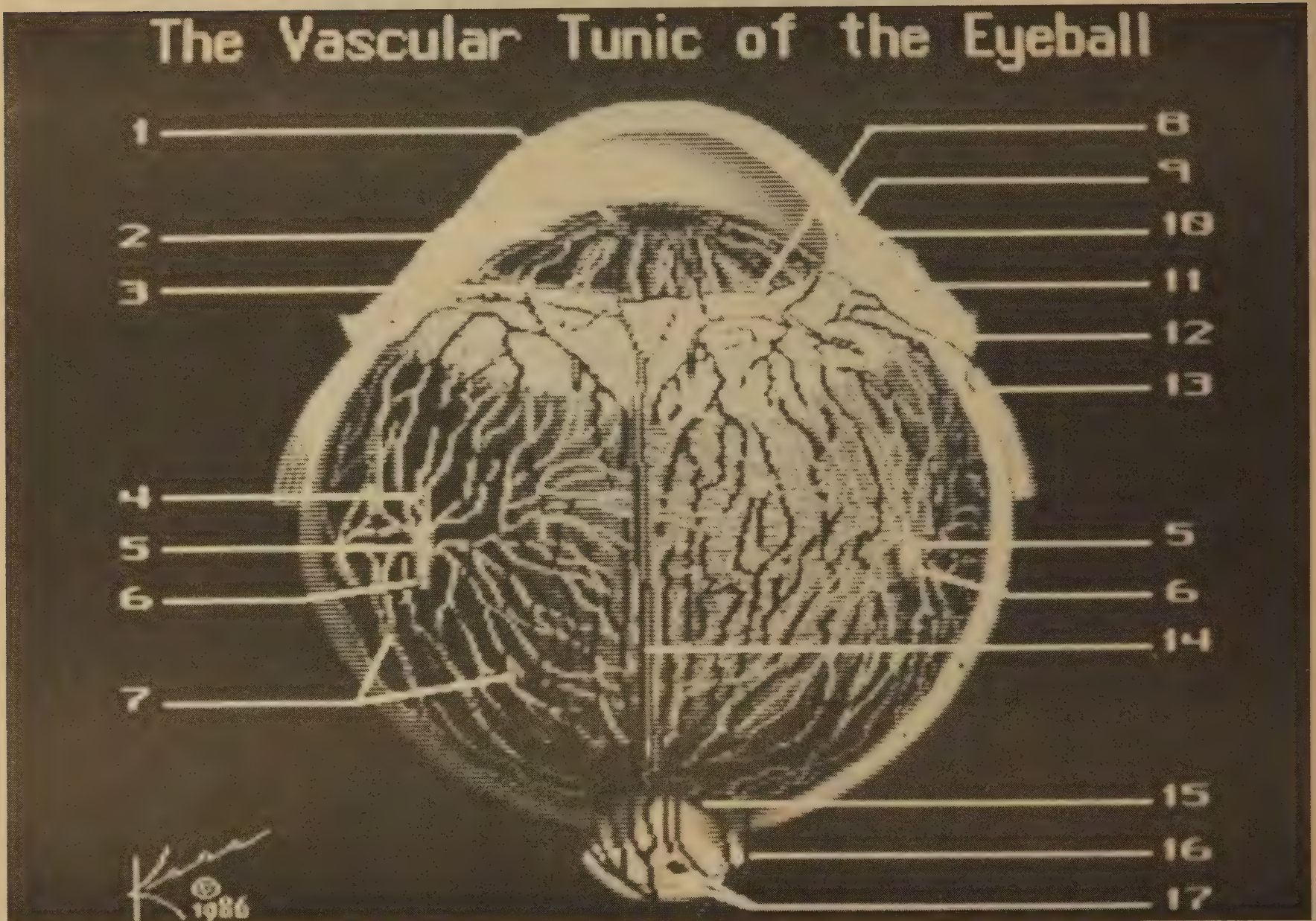
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# Amiga Graphics: A Studio In A Box

By Ben and Jean Means



1. This human eye is a medical textbook illustration drawn by Kara Blohm, who earns her living with Amiga art. Kara uses an Amiga 1000 with expanded memory, DPaint II, Digiview, a Kurta Series I Penmouse and Liquid Light's Polaroid Palette Imprint System.

**T** rue to its name, the Amiga has been a very good friend to the careers of many graphic artists.

Graphic artist Kara Blohm put aside the brushes, pens, and pencils that she had used for 17 years and recently learned to master a new graphics tool: the Amiga mouse. She says, "It's like drawing with a deck of cards," but she likes the hand her mouse has dealt. Kara now makes her living selling logos, videos, slides and color separations drawn on the Amiga to clients in business, industry and medicine.

Meredythe Dee is a college student who is preparing for a one-woman show of her Amiga art in San Francisco galleries; she learned her new skill at Mira Costa College from Pro-

fessor Howard Ganz, who teaches two computer art courses on five Amigas running custom graphics and live performance software.

Entrepreneur Kayvan Pejooch owns two printing businesses in northern California, where he uses the Amiga as a marketing tool to create custom color logos, flyers, calendars, invitations, banners and even t-shirts. Says Pejooch, "Black and white printing is on its way out."

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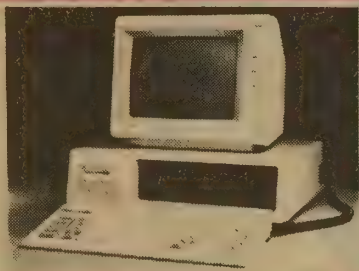


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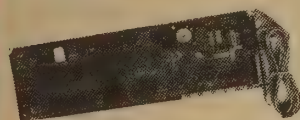
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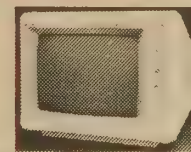
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box with its palette of colors which can be varied for saturation, brightness and hue. Most excitingly, computer art is fast; colored shapes can be easily created, changed, moved and copied, so that the computer artist can create in minutes what would have taken painstaking hours with a pen or brush. With an Amiga, anyone with imagination and a few pieces of software can create wonderful works of art.

The Amiga is a custom graphics studio in a box; it can produce 4,096 colors, and it displays in four different resolutions: Low Res (320×200 pixels), Interlace Mode (320×400 pixels), Medium Res (640×200) and High Res (640×400). High Resolution, with over a quarter million pixels (dots) per screen, gives a much sharper and clearer picture than Low Res, which has only 64,000 pixels. But High Res draws slower and requires at least one megabyte of RAM for complex applications. In addition, the High and Medium Resolutions offer a 16-color display palette using four bit planes of color, while Low and Interlace Modes offer 32 colors using five bit planes of color.

The number of colors in a display palette is important, because the more colors in a palette, the more natural and lifelike the computer image will look. The Amiga is the only personal computer to offer Hold And Modify (HAM) images, which have a unique palette of 4,096 colors, using six bit planes of color! HAM images are so lifelike that they almost look like photographs. There are two special HAM modes: 320×200 or 320×400, with all 4,096 available simultaneously.

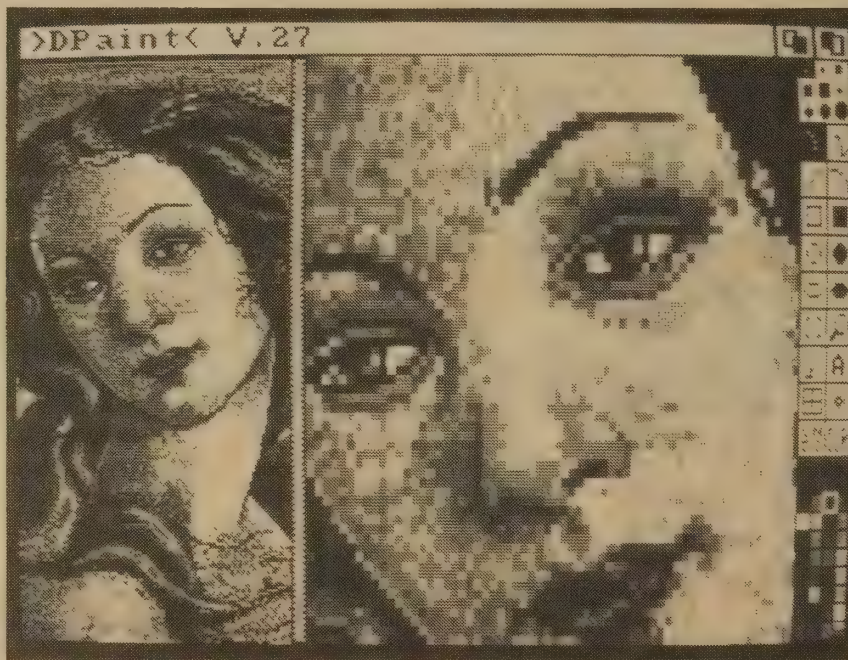
To take full advantage of the Amiga's multitasking function, which allows several programs to run at once, Electronic Arts has developed a standard file protocol for the Amiga called Interleaved File Format (IFF). IFF is used by virtually all Amiga software developers and allows complete transfer of pictures, brushes and palettes among programs in the form of Interleaved Bitmaps (ILBM), along with sounds and musical scores in 8SVX and SMUS format. Using the ILBM format for any two dimensional raster graphic image with a color map, IFF files can import logos from titling programs and real images captured by a digitizer into paint program drawings to create a total painting.

## OPENING THE AMIGA'S PAINTBOX—SOFTWARE

Over 70% of Amiga users own a copy of *Deluxe Paint* by Dan Silva of Electronic Arts; the rest are probably just using the Amiga for spreadsheets and word processing. The reason for this popularity is simple: *Deluxe Paint* is quite possibly the best graphics program for any computer. And *Deluxe Paint II* (\$129.95) is even better. *Deluxe Paint II* is a sort of word processor for graphics, with an overwhelming variety of graphics tools. Image creation begins in the



2. This is a Chinese papercut that was digitized and colored using DigiView.



3. An example of DPaint Magnification, which has added features of precision incremental zooming and on-screen scrolling.

Paint Toolbox, which is a series of icons along the right side of the screen. There are ten standard brushes for painting, using circles, squares, and dots resizable to 100 pixels wide, for use just like an artist's traditional assortment of round and flat brushes. The standard brushes are used with the eight shape and line tools to create dots, lines, curved lines, rectangles, circles, ellipses, polygons, and to do freehand drawing. The custom brush

selector will grab any part of a drawing and turn it into a brush; this brush is actually a little picture as complex as you like, which can be wielded like a paintbrush and can be saved like clip art.

The rest of the paintbox contains some powerful tool icons for creating and modifying images. The Airbrush Tool has a fully adjustable spray with a variety of tips and nozzles. The Fill Tool changes the color of any constrained area and has four

modes: solid, 3-D perspective, patterned or gradient shading with adjustable dithering. Dithering randomly overlaps pixels between bands of color for more natural shading. The Symmetry Tool will repeat one movement of a brush from two to 36 times for string art effects in either mirror or cyclic fashion, or as tiles of any width or height. The Grid Tool will constrain a drawing within precise x,y boundaries, and the Text Tool will access all Amiga fonts. The Magnification Tool will enlarge any portion of the screen for drawing on the pixel level; this is similar to the MacDraw fat bits option and also offers flexible zoom and scrolling controls.

Below the drawing tools is the color Palette, with from two to 32 colors currently selected out of the universe of 4096 colors. The Palette Control Requester can create 12 bit color by defining the Red, Green, Blue (RGB) levels or by defining the Hue, Saturation and Value levels over a 16 step scale for each. The Spread function will let you choose any two colors, and the program will compute a smooth color scale; for instance, selecting red and yellow will map a full range of oranges between them. Another exciting special effect of the color palette is color cycling, which rapidly changes the colors within a static image. The four independent color cycles can create cascading waterfalls of color that can be adjusted from glacial to frenetic to create pseudoanimation through the movement of light instead of shapes.

In addition to the bulging paintbox and the galaxy of color, *DPaint II* has more gadgets than the bridge of the starship Enterprise, with six pull-down menus: Picture, Brush, Mode, Effects, Fonts and Preferences. Some of the more spectacular features are Blend, Smear, Shade and Smooth to allow watercolor, pastel and oil paint effects; Stencil freezes any selected colors on the screen to create complex effects like an airbrush with templates and friskets. Perspective puts a third dimension into *DPaint II* by rotating any brush to any angle on the x, y, z axes to produce simple 3-D effects or Escher surrealism. In addition, anti-aliasing can be selected to clean up jagged edges of objects when placed at bizarre angles.

Page size can be set to four sizes: Standard using the current screen resolution, Full Page for 8½" by 11" output, Full Video to fill a TV screen with no black borders, and Custom—up to 1008×1024 pixels.

*DPaint II* is fun, easy to use, and as powerful as a speeding locomotive. There are keyboard equivalents for most major options, and the manual is clear and concise. To put it simply, *DPaint II* is the most complete graphics program anywhere for any microcomputer.

*Aegis Images* by Mike Gomez, Robert Leyland and Mathias Genzer for Aegis Development (\$39.95, or free with best-selling *Aegis Animator*) is another fine paint program and com-



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plementary to DPaint; it offers several unique Line and Shape Tools to form triangles, parallelograms, polygons and arcs. The Symmetry tool, called Mirrors, has several exclusive options of vertical, horizontal or diagonal symmetry, while the Pantomograph Tool will replicate one part of a painting to another part of the screen and can be used with an airbrush or line tool to create phantom or spectral effects. Aegis ArtPAK I (\$34.95) contains extremely high quality 32 color clip art by professional artists Jim Sachs and Richard La Barre (artists behind the game "Defender of the Crown").

DigiPaint by Jamie Purdon of NewTek (available at \$59.95) is the first paint program to access 4,096 color HAM images in both HAM resolution modes to create fantastic realism and shading effects. In addition to breaking the 32 color barrier, DigiPaint is IFF compatible and will offer 12 different paint modes, including blending, tinting and smooth shading, full screen effects of enlarging, reducing and mirror reverse, lasso cut and paste with automatic edge blending, and fat bits Magnify mode.

Instead of painting with pixels, True BASIC's 3-D Graphics (\$49.95) will mathematically create drawings of perspective and parallel projections from coordinates and equations written in True BASIC language. This graphics program requires the True BASIC system (\$99.95), an updated language developed by Dartmouth professors John Kemeny and Thomas Kurtz, the inventors of BASIC.

Deluxe Print (\$99.95) by R. D. Rosenberg for Electronic Arts puts your imagination to work with a rainbow of colored inks to create personalized signs, letterheads, calendars (for any month of any year), labels, greeting cards, bumper stickers and banners. Deluxe Print can overlay graphics and text from any IFF program with a mix of bright colors for creative custom designs, and comes with a large selection of clip art from pandas to space probes. A color printer and DPrint make the Amiga a fun and flexible home print shop, with instant results and without paying a fortune to a local printer. With 16 colors per screen and unlimited imaging and image control, DPrint is a great program.

## PERIPHERALS AND ACCESSORIES

For the artist who wants to use a pen instead of a mouse, Kurta Corporation has several solutions for producing smooth, controlled lines. The Penmouse+ (\$295) is an 8½" by 11" by ¼" thick pad which accepts input from its cordless pen for detailed drawing and fine tracing. The Kurta Series I (\$495) is a beautiful graphics unit, ergonomically angled at eight degrees, with 11 programmable function keys and five program keys. The Series I is particularly well suited to CAD/CAM uses and comes with a four button corded cursor. It can also



4. Photo of a DigiPaint painting, using computer-drawn and real-life digitized images in 3-D perspective.

be used with a cordless pen (\$150 option).

DigiView (\$199.95), by Tim Jenison for NewTek, uses a Panasonic WV-1410 b/w video camera (\$280) mounted on a CS-1L copystand (\$75) to digitize real images in either color or black and white. DigiView works in all resolution modes, including HAM; it reads 21 bits per pixel to see over two million colors, which it interpolates to the closest Amiga color. DigiView has two levels of dithering, as well as adjustable control over brightness, contrast, saturation, RGB values and sharpness, to create effects from maximal realism to the utterly surreal. The 4,096 color HAM images can be ported over to DigiPaint for drawing, or can be reduced to 32 colors for use in DPaint II or Images. This is one of the best applications for the Amiga; now, anything you can focus a lens on can be an image on your computer screen and then modified in a paint program. Think about it—put a third eye on your mother-in-law, or turn your cat's hair green for St. Patrick's Day. The mind boggles!

Print'n Wear from FotoWear (\$15.95 for ten sheets, plus \$1.50 postage) is a special heat transfer paper for ironing your computer designs onto T-shirts. The washable designs can be output with a color printer or a b/w printer for coloring with permanent crayons.

## OUTPUT

Output on the Amiga can be done on dot-matrix, thermal transfer or inkjet color printers, with your choices limited by sacrificing speed or sacrificing money. The dot matrixes, like Apple's ImageWriter II (\$595), are moderately priced but slow, with flat colors and poor resolution; the Okimate 20 thermal printer has surprising quality for \$249, with 144 dots per inch (dpi), but printing takes 13+ minutes and the ribbons (\$5.95) only make 14 prints.

The Xerox 4020 inkjet printer (\$1500) takes about four minutes to print a 240 x 120 dpi image or about two minutes for a 120 dpi, while the CalComp ColorMaster (\$4500) prints full 240 dpi. Grabbitt (\$29.95) by

Discovery Software is a 10K screen dump utility that eliminates waiting for a slow color printer by multitasking a screen dump to a printer while the main program continues to run. Grabbitt contains a palette utility, called Anytime, for closely matching the colors of your printer to the colors on your screen.

The best form of color output for the Amiga is the Imprint System from Liquid Light (\$2,495) by hardware developer Nick Vassilakis and programmer Patrick Hughes. The Imprint System includes a Polaroid Palette Film Recorder and the Imprint software with converter (available separately for \$495) to create professional 35mm color slides or Polaroid instant prints from any IFF picture, with raster fill and full control over color and exposure. Most importantly, Imprint can create C-M-Y color separations, at a fraction of the normal cost.

For black and white printing, Scott Anthony of S. Anthony Studios has created three programs that convert Amiga files into PostScript files for high quality output on the LaserWriter and other PostScript language printers. LaserUp! Print (\$79.95, with Stephen Rojic) converts any IFF picture file into PostScript halftones with up to 256 levels of gray, while LaserUp! Plot (\$49.95) converts CAD images from Aegis Draw or Draw Plus into PostScript. LaserUtilities Vol. 1 (\$39.95) converts ASCII text into PostScript with page formatting, and LaserFonts Vol. 1 (\$39.95) contains three decorative PostScript fonts.

## THE COST-EFFECTIVE AMIGA WORKSTATION

An Amiga 500 with one megabyte of RAM, a 13" color monitor and two disk drives currently sells for about \$1400 in the LA area; a Mac II with one meg of RAM and a color monitor lists for about \$6,000. For this extra cost, the Mac II has a palette of 256 colors out of 16 million 24-bit color choices with a resolution of 640 x 480, which produces stunning graphics. But for those of us with an eye on our budget, the Amiga's 320 x 400 resolution with 4,096 colors on screen

or 640 by 400 with 16 screen colors on screen like a cost performance leader.

For under \$5,000, you could have a whole Amiga graphics studio with paint programs, a digitizer, a color printer, a Polaroid Palette, computer animation and dazzling desktop video, which we'll examine in a future issue.

Color sells; it also adds the dimension of light to personal computing, and that's important. After all, isn't life more than just black, white and gray? □

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# PC-Talk 4

## *Novice-Friendly, Powerful Communications Software*

By Robert Beauchamp

**PC-Talk**, from Headlands Communications, was written by the late Andrew Fluegelman and was the original Freeware™ program. Its newest incarnation, **PC-Talk 4**, maintains the exacting standards and simplicity of operation that Fluegelman demanded.

However, along with the bound manual and easy-to-read documentation there is also a \$129 price tag.

In many people's minds this cost will be justified by the communication program's ease of use. Those who buy this software will also be joining a community of over half a million **PC-Talk** users.

While many programs today get more and more complicated and pile on feature after feature, **PC-Talk 4** maintains a simplicity that allows even first-time users of communications software to set up and get online quickly.

We used **PC-Talk 4** on a Zenith 148, with two disk drives and 256K of RAM. (The program requires at least 192K of RAM, DOS 2.0 or higher, and will work with only one disk drive if necessary.) The Zenith is, as Headlands recommends, 100% IBM compatible. The modem used was the new Migent Hayes compatible 1200 baud Pocket Modem.

### GETTING STARTED

The manual first directs the user in the prerequisite disk backup. Although it now costs money upfront, **PC-Talk 4** is still not copy protected.

Upon entering **PC-Talk4** at the **A>** prompt, you'll be told when the program is loaded; the program also checks to see if your modem is on. If you have just installed your modem for the first time, **PC-Talk** also provides a test to make sure your modem is configured correctly. The user can then call up the help screen by pressing the Home button.

The help screen contains all the commands available to the **PC-Talk** user. It can be called up at any time during any operation.

The first command the new user will probably use is **<Alt> D**, which calls up the dialing directory. The

dialing directory allows you to enter up to 990 different phone numbers. The Headlands BBS, which provides support for **PC-Talk** users, is already listed.

Entering new numbers is simple enough. The communication parameters are already set at the standard 1200 baud, No Parity, 8 bits, 1 stop bit. If the number you wish to call has different parameters, you change them here. **PC-Talk** stores this information and refers to it automatically when dialing.

There are two other places the communications parameters can be set. If, for instance, you do not know what the communications parameters for a particular bulletin board are before calling, you can press **<Alt> P**, and call up the parameters menu. Here you can change the parameters while online until they are correct.

The other place to change the parameters is in the default menu. Here, for example, is where you would change the default setting to 2400 baud rather than 1200 if you had a 2400 baud modem. This is also the place where you can change the colors of your screen if you have a color monitor.

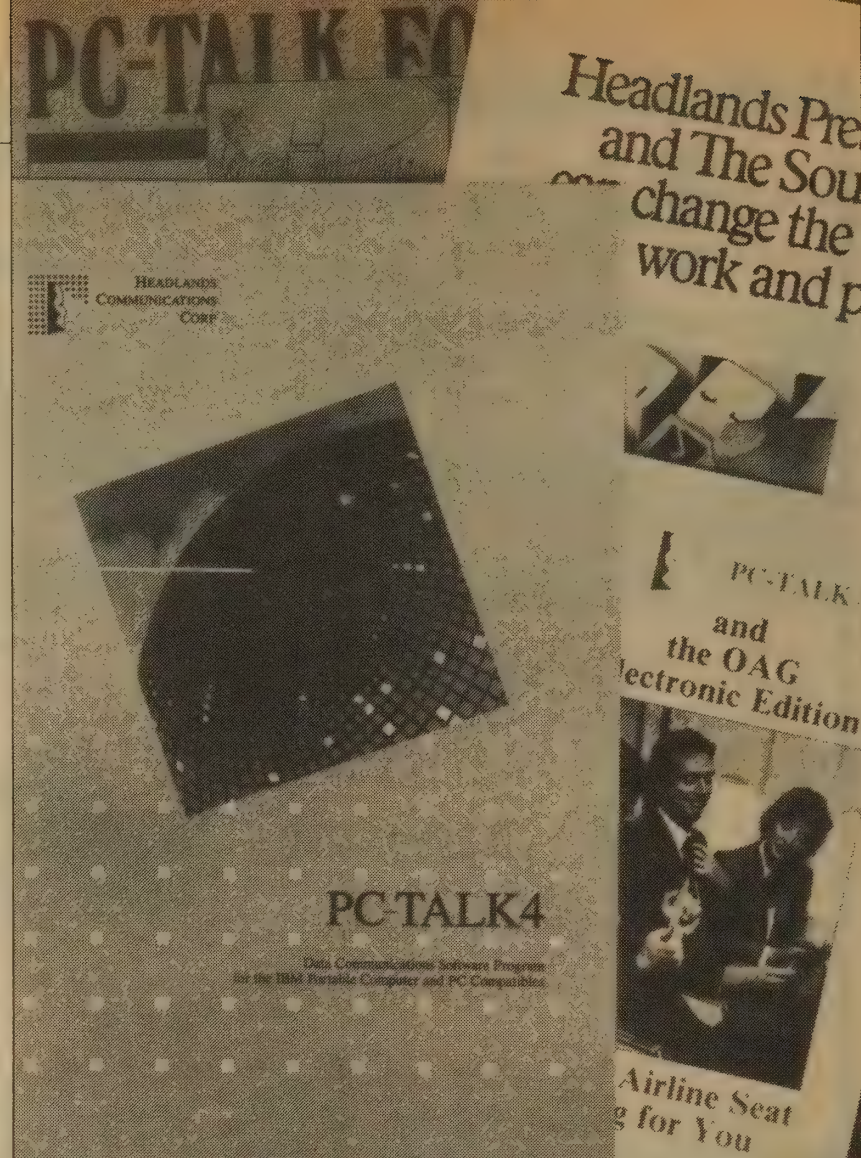
It's important for the first time user to note that it is not necessary to go to these directories right off. All parameters can be changed in the dial directory for each number.

Dialing a number is automatic. The user simply enters the directory number of the bulletin board and presses return. The user will either get a "connect" message if the call is successful, or a "no carrier" message if it isn't. When using a more sophisticated modem the user may also be told if the line is busy.

And that, for the first time user who simply wants to get online, is all there is to it.

### ONLINE OPERATIONS

Once you're online, the program allows you to transmit or receive files, commonly called uploading and downloading. It will also let you print incoming and outgoing data onto your printer as it goes over the



**PC-Talk 4** is simple enough for new users and provides the features many experienced users require.

line. You can also capture screens to your printer.

**PC-Talk** allows the user to split the screen while online. This way you can edit any text to be entered before it is sent.

To send or receive a file, you enter the file name and then choose whether you want to use the XMODEM error checking protocol. Once this is done the program splits your file into blocks and charts the progress of the files on the screen. It tells you the number of the blocks as they are received and verifies that your computer has successfully received the block. If the XMODEM protocol detects an error, due to phone line noise or other problems online, it will give the message "\*\*\*Resending block ...". You can terminate transmission at any time by pressing the **<Esc>** key. **PC-Talk 4** will return you to the main program automatically at the end of the transmission.

### ADVANCED FEATURES

For more advanced users, **PC-Talk 4** provides a number of features. It allows you to create input strings and macros that get you through repetitive logon procedures quickly. It also provides TTY, VT100 and VT52 screen emulation for communicating with mainframe computers, although not all features of these terminals are supported.

Another advanced feature of **PC-Talk** is its ability to access DOS. This

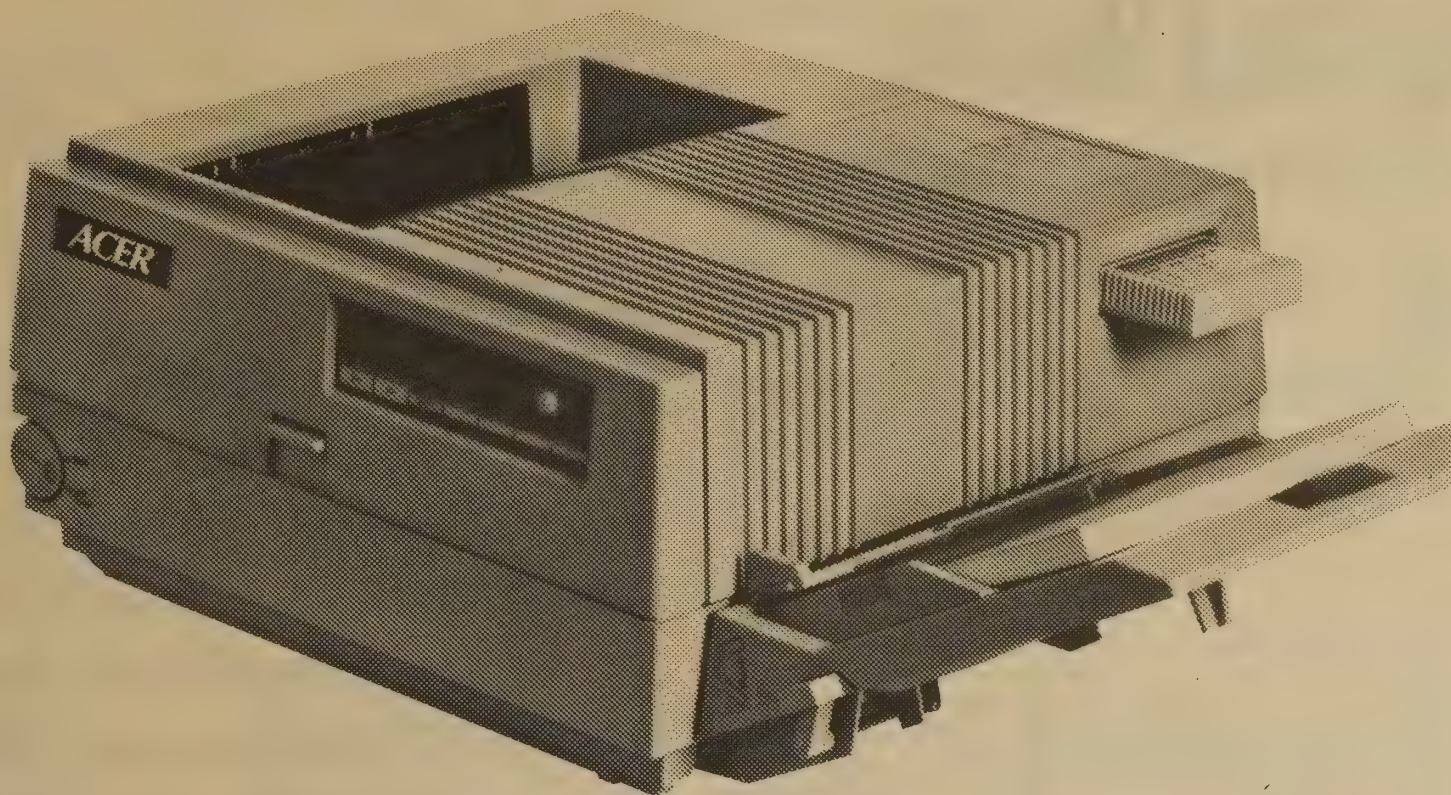
allows the user to exit **PC-Talk**, initiate any DOS commands, and return without any disk swapping or reloading of programs. It also allows you to run your favorite word processor or spreadsheet while in **PC-Talk**. This ability is limited, of course, by the amount of memory you have available on your computer.

**PC-Talk** makes the management of files easy as well. The user might, for example, keep a disk of files to be uploaded in the B drive. By pressing **<Alt> V** and giving the filename, the user can view any file stored there. It is also possible to print out or delete any file.

**PC-Talk's** manual is complete and explains each aspect of online communication in easy-to-understand language. It even provides a whole chapter on the "Seven Mysteries Of Data Communication" that should help any novice user leap the hurdles involved in getting online. Even without referring to the manual, **PC-Talk** makes it easy to learn the program. All you have to do is call up each command and see what it does.

**PC-Talk 4** is the latest version of a time-tested and immensely popular program that is simple enough for new users and provides the features many experienced users require. By sticking to these principles, it offers increased power and convenience while remaining true to the vision of the original. (Headlands Communications Corp., P.O. Box 8, Tiburon, CA 94920, 415/435-0770.)□





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# InstaPlan:

## The Project Manager For Real People

By Woody Liswood

**T**ruly innovative software makes the difficult easy and obvious. The first time I booted *InstaPlan*, I felt that I'd found the first project planner that made sense, was easy to use and helped, rather than hindered my planning. It made me wonder why the *InstaPlan* interface was not used by the heavyweights of the field.

As a human resource consultant, I use project planning software to estimate project costs, prepare PERT and GANTT charts for client use in proposals and during project reviews, and to allocate resources to insure that projects have adequate staffing for completion on time and within budget. If you have spent significant amounts of time with either *Time Line* or *Super Project*, as I have, you will appreciate *InstaPlan*'s ease of use and good looking display graphics, both on screen and on hardcopy.

One of the problems associated with project planners is that they assume you already know and understand critical path methods and/or PERT networks. If you do, you can start using their programs immediately. If not, there are normally short tutorials and expositions, which may serve to confuse the neophyte user rather than help. Just in case you forgot, the critical path is the shortest path through the series of project steps to get from the beginning to the end. PERT stands for Program Evaluation and Review Technique. The PERT network takes separate project steps and links them to show all subordinate and subsequent steps along with all of the interrelationships and milestone events so that a project can be tracked and displayed somewhat like a gigantic flow chart.

### THE INSTAPLAN APPROACH

The *InstaPlan* metaphor starts with an outline rather than with a critical path or PERT description. You enter your projects as if you were creating an outline of the project steps using your favorite word processor or outliner. As you generate this activity outline, you can continue to add detail as it occurs to you or as it happens during the work itself. When you are finished, according to the *InstaPlan* documentation, "You have

what planning theorists call a Work Breakdown Structure."

To help you in analyzing your work, *InstaPlan* allows you to collapse the outline to higher levels or expand it as you wish. During the initial creation of your outline, you use the arrow keys to move the activity element you are defining to the left or right. As you move an activity to the right, you automatically create a higher level grouping just above that current activity.

As you go from one level to another *InstaPlan* identifies each activity or group of activities for you using a + or a - sign to show whether the current line you are working on is the start of an activity or is the detail within an already defined level. As the outline is created, a tab on the far right of the screen allows you to set the length of time which the activity should take. If you choose to use elapsed time, the elapsed time is in continuous days, not work days, so that if you want a task to end one week from its start, you would use an elapsed time of seven days. *InstaPlan* also keeps track of all changes in the detail lines so that the groupings show the consolidated costs and times for their subsets of activities.

For example:

- + Custom Salary Survey {25ed}
- Meet with client to determine needs [1ed]
- + Prepare Proposal {14ed}
- Develop Job Descriptions [5ed]
- Develop Questionnaire [5ed]
- Develop Participant List [7ed]
- + Gain Client Approval before continuing {15ed}

The + in front of the outline shows a higher level activity. The numbers within the {} show consolidated figures which are automatically tracked by *InstaPlan*. The numbers within the [] are numbers which you enter. The numbers do not need to add up, since you can set starting dates as you wish and can have several activities occurring simultaneously.

*InstaPlan* works from a series of views. As you create your outline, you can instantly change from the activity outline, to a GANTT chart, or to a spreadsheet where resources and costs are kept and consolidated. In each of these views you can manipulate and edit the activity outline to see what effect your changes have

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**InstaPlan works from a series of views. As you create your outline, you can instantly change from the activity outline, to a GANTT chart, or to a spreadsheet where resources and costs are kept and consolidated. In each of these views you can manipulate and edit the activity outline to see what effect your changes have upon the total project.**

---

upon the total project. For each major level in the outline, *InstaPlan* keeps track for you of elapsed time and total costs.

*InstaPlan* works from a horizontal menu which some folks might call a Lotus style menu (on the bottom of the screen, however, so Lotus cannot sue them for a look and feel violation).

The main menu is invoked with a /. From it you can switch to any of the views, locate strings, insert or edit lines in the activity chart or spreadsheet or resource views. You can delete lines or groups of lines, invoke a help menu, move lines or groups of activities, set a multitude of options for dates, dollars, colors

and whatnot. You can also save and quit, adjust the timing to insure adequate resources, undo a recent deletion, print a variety of reports, set the schedule dates for each line in the chart, or set a focused view of the chart.

The documentation is a spiral bound book illustrated profusely with screen displays. It is part reference material and part tutorial. It has both an index and a table of contents. While it is written well, in my opinion, it suffers from doing too many things at once. Since it combines the tutorial along with the explanation of the program features, it is easy to overlook any particular feature you might be looking for.

For me, a better approach is to keep the tutorial separated from the reference section so that both may do their jobs. Another criticism here is the language. Although written in a straightforward breezy style, the manual refers to man days and man weeks. A modern alternative would have been to call these work days or



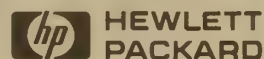
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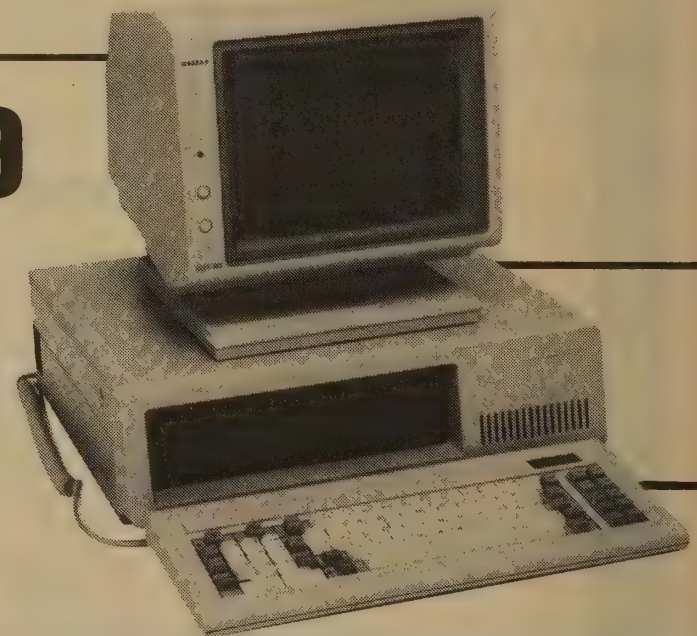
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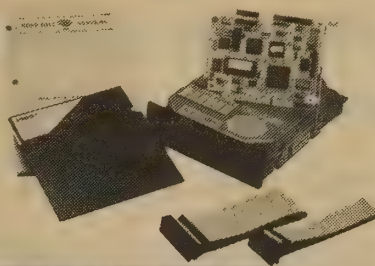
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work weeks and not irritate over half of the population.

The prime view within *InstaPlan* is the activity view. The activity view shows the full outline using the whole screen. Along the right side of the screen the elapsed time planned for each activity as well as the subtotals and totals for major activity groups is shown.

The GANTT view shows a truncated activity view on the left side of the screen (although it still shows the elapsed times), and a GANTT chart on the right side of the screen with a vertical bar to show the current date. Shown on the GANTT are the critical path, normal work, delays, milestones, slack time, actual times and reference times.

*InstaPlan* allows you to save a plan as a reference plan. The reference plan then becomes a built-in baseline. You continue to make changes in your plan as the activities actually happen so that you can, at any time, compare planned to actual. This way you can visually see the difference between a planned and approved plan and the actual happenings. While working on the GANTT view, you can still edit and change the activity view.

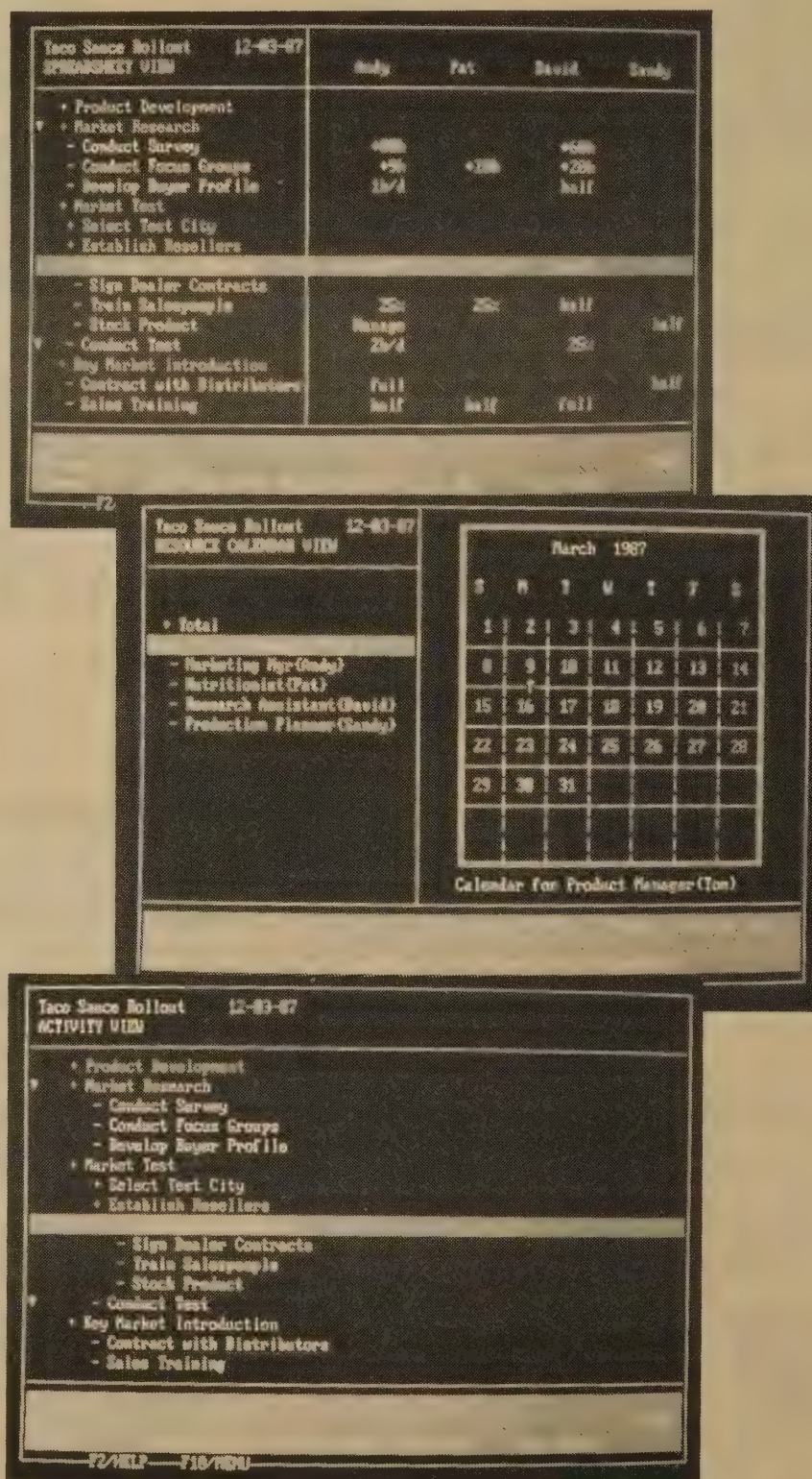
The PERT view is not the typical PERT chart. It shows, vertically, the relationship between the currently selected activity and all the predecessors and subsequent activities. It does not show all of the paths which might be currently active or which might bypass the selected view but be performed during the same time frame.

The resource view shows all of the resources which have been entered into the system, the current billing rate and working hours for each, as well as the method of accrual. Like other project planners, you can set the hours in a working day, the point at which costs accrue in the project and the method (such as hours, days, and weeks) which is the appropriate measure of the resource. Resources are individuals, groups, fixed costs, variable costs, and anything else you wish to use.

The spreadsheet view shows a truncated activity outline along with a column for totals and a column for each of the defined resources. You can then add the appropriate accrual for each of the resource category, and *InstaPlan* will then do the math for you and total each up to the appropriate levels. If you have worked with *TimeLine* or *SuperProject*, you will appreciate the ease with which you can assign, add, subtract, and play what-if with the resource assignments.

The resource calendar view allows you to set a specific calendar for each resource. You can specify how many hours each resource can work on any single day. *InstaPlan* will then level the project for you automatically, if you wish, and extend the plan as necessary to accommodate the schedules for all of the resources.

**For each activity you can show almost anything you might think of concerning project planning and control. The GANTT chart graphics as produced on a HP LaserJet are among the best I have found, and fit well into professional presentations.**



*InstaPlan* permits you to visualize and plan projects from a variety of perspectives—for example, an outline-type listing of necessary activities, a calendar for scheduling, and a spreadsheet format showing responsibilities of individual employees.

Lastly there is a resource loading view. It graphically illustrates the cost or quantity of work assigned to the resource.

*InstaPlan* has flexibility in determining the system variables and constants. You can specify work time, elapsed time, and quantity of work in hours, days, weeks, months, quarters or years. These can all be intermingled so that you can specify the time period which best matches the activity. For example, you can specify a resource as a single project team composed of ten individuals. You can then specify that resource as working one month, which would calculate as ten individuals working for the allowable work time that month.

A critical part of any planning software is the methodology which determines dates, sequencing, interdependencies and independencies. As you create your outline, *InstaPlan* assumes that all activities are sequential, with a new activity starting when the previous one ends. Using the schedule view allows you to make any activity or group of activities start before a certain date, to start after a certain date, to overlap another activity, or to pad an activity for a specified number of days. It also allows you to set a start date, to specify a milestone, to make any set of activities independent from the main sequence, or to remove any set of dependencies which had been previously created.

The printing and report section of *InstaPlan* is a joy. The print menu allows you to define, change, remove and select previously defined reports for printing. You can also select more than one report to run when you print as well as make multiple copies of each report. The types of reports are as you would expect: activity, resources, schedules, resources and GANTT chart graphics as produced on an HP LaserJet are among the best show multitudes of goodies about a plan. For each activity you can show such items as start and stop dates, planned vs. actual costs, schedule dates, and almost any other thing you might think of concerning project planning and control. The GANTT chart graphics as produced on a HP LaserJet are among the best I have found, and fit well into professional presentations.

I have some minor criticisms of the printing routines. Although you can make multiple copies of a report, it prints all pages sequentially, then goes and does it again. If you have a laser printer, this is a waste of time, since after the page is made up in the laser, copies should just be a matter of repeats and form feeds. The other criticism is that there is no support for digital plotters. Being able to use a plotter and control the colors of the chart elements is an important part of producing professional presentations. Producing the charts directly on the transparency material would facilitate the production of presentations.



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| Toshiba 1.2 Meg AT .....                                | 119  |
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| No Slot Clock .....            | 44   |
| DOS 3.2 w/GW<br>BASIC .....    | 69   |
| 20 Meg<br>w/Controller .....   | 299  |
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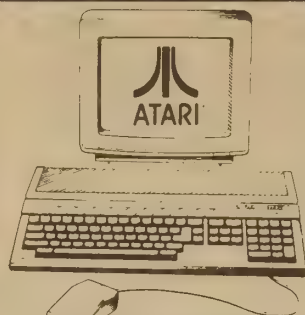
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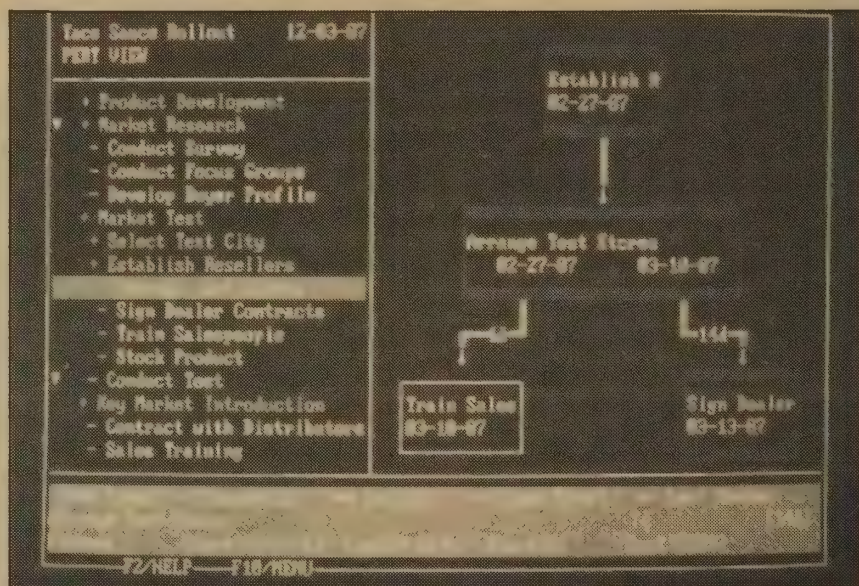
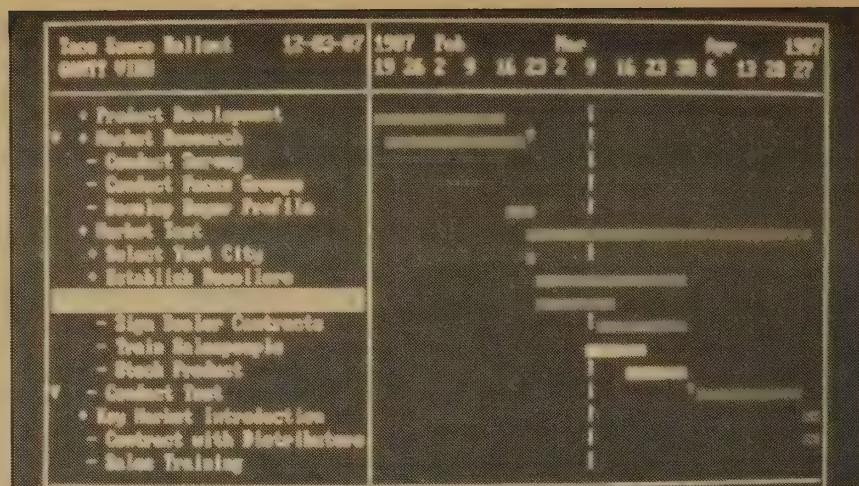
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| Game I/O card .....                     | 15    |
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| XT Computer Case .....                  | 28    |
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| Eprom Burner .....                      | 130   |
| EGA Card .....                          | 145   |

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|---------------------------------------------------|-------|
| ELT-286 8/10 MHz .....                            | \$425 |
| AT Motherboard 6/10 MHz .....                     | 360   |
| Baby AT Motherboard 6/10 MHz [0 Wait State] ..... | 370   |
| 3M Multifunction Card [OK] .....                  | 145   |
| 2MB Memory Expansion [OK] .....                   | 125   |
| AT Multi I/O Card .....                           | 65    |
| AT case .....                                     | 60    |
| AT 200 W power supply .....                       | 89    |
| Key Board for AT .....                            | 59    |
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| 8042 EGA .....             | 410   |
| 8060H EGA multi sync ..... | 500   |
| 8060S EGA multi sync ..... | 545   |

### Disk Drive/Controller

|                                           |       |
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| [2] 30MB Seagate ST 4038 .....            | 520   |
| [3] 20MB Seagate Microscience HH825 ..... | 240   |
| [4] WD Hard Disk Controller .....         | 75    |
| [5] DTC Hard Disk Controller .....        | 75    |
| [6] 40MB ST251 Seagate .....              | 450   |

### Miscellaneous

|                                                                                     |           |
|-------------------------------------------------------------------------------------|-----------|
| Kingtech Portable Computer Kits XT/AT (Case, Keyboard, Power Supply, Monitor) ..... | \$370/400 |
| Kingtech LCD Portable Computer Kit .....                                            | 795       |
| Busmouse .....                                                                      | 85        |
| Logimouse c7 .....                                                                  | 72        |
| Multicenter .....                                                                   | 45        |
| AC Power Center .....                                                               | 25        |
| AC Power strips .....                                                               | 10        |
| Diskette File Box .....                                                             | 9         |
| Printer cable .....                                                                 | 8         |
| Modem 300/1200 .....                                                                | 95        |
| 80287-8 .....                                                                       | 245       |

### MONITORS

|                         |       |
|-------------------------|-------|
| Quimax TTL .....        | \$125 |
| Casper TTL .....        | 85    |
| Panasonic TTL .....     | 79    |
| Color Monitor .....     | CALL  |
| EGA Color Monitor ..... | CALL  |
| EPSON PRINTER .....     | CALL  |

### Floppy Disk Drive

|                                |       |
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| [1] 1.2 MB Teac FD 55GFV ..... | \$115 |
| [2] 360 KB Teac FD 55Bv .....  | 89    |
| [3] 360KB Fujitsu M2251A ..... | 75    |

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To save you from keying in common elements from plan to plan, there is the capability to transfer plans within InstaPlan. You can append parts of other plans into the current plan if, for example, you wish to capture the resources already defined in the previous plan. You can also merge plans so that you can use with modifications any earlier plan which may meet current needs. During the merge, you can select activities, networks, resources, calendars or the entire plan.

You can also transfer information between word processors, Ready, Treeprinter, Lotus 1-2-3 and dBASE III. In all cases, the capability is for two way transfers. I have not heard of Treeprinter, but the documentation says that it will take a file in a ".RDY" format and create a flow chart type of output.

The program occupies about 468K. The rest of RAM, up to 640K, is available for the actual plan. InstaPlan does not support any of the extended memory systems. This amounts to a plan of around 600 or so activities each using about two or three resources. The documentation states that with no resources, InstaPlan will process approximately 1,400 activities.

The earliest date allowed in InstaPlan is January 1, 1986. The latest is December 31, 2005. The maximum or minimum value accepted is 2,147,000,000. The minimum time interval is one hour, and the

maximum is nineteen years. The plan can have up to 11 levels in the activity outline. It can also have up to 11 resource levels. All else is limited only by available memory.

## CONCLUSIONS

Do you understand critical path networks and agonize over PERT charts? Do you spend hours rearranging networks when, after you get things placed properly, you realize you left out two critical elements, or the plan changed and you now need to do a few more tasks between some already planned tasks? Have you agonized how to change resource time allocations from days, to weeks, to hours, to percent of time, to elapsed time, to actual time work, to ...? Do you wish you could answer, graphically, the questions about where are we now, or what did the latest set of changes do to our future plans? If you use project planning software to estimate costs for projects, do you feel that the graphics are the most important part of the estimate? Do you wonder why what seems such a simple task really appears quite complicated? If you answered yes to any of those questions, InstaPlan deserves your attention. (InstaPlan Corporation, 655 Redwood Highway, Suite 311, Mill Valley, CA 94941, 415/389-1414)□

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| Turbo 286 (15 MHZ) w/0k        | 595     | 495       |
| Turbo 286 (12 MHZ) w/0k        | 429     | 389       |
| Mini 286 Owait w/0k (8/10 MHZ) | 385     | 345       |
| Turbo 286 (6/10 MHZ)           | 375     | 335       |
| Mini 286 Owait w/0k (6/10 MHZ) | 369     | 329       |
| Turbo XT (4.77/10 MHZ)         | 115     | 93        |
| Turbo XT (4.77/8 MHZ)          | 95      | 83        |

### MONITORS

|                                                    |         |         |
|----------------------------------------------------|---------|---------|
| Samaung 12" High-Resolution Amber                  | \$79    | \$69    |
| Quimax 14" High-Resolution Amber                   | 125     | 118     |
| Casper RGB Color Monitor                           | 279     | 259     |
| Samsung 14" EGA (640 x 350 Res.)                   | 349     | 325     |
| NEC Multisync EGA (800 x 560 Res.)                 | 545     | 525     |
| Taxan Multivision 770 EGA (Res. 800 x 600)         | 545     | 520     |
| Nanao 8060 H/S Res (820 x 620)                     | 515/545 | 499/520 |
| Amdek (Wyse) Monitor (Res 1280 x 800) & Controller | 875     | 749     |

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| Super-enhanced AT Type #5339 for PC/XT/AT | 69   | 59   |
| Maxiswitch #5060 for PC/XT/AT             | 59   | 52   |
| Maxiswitch Enhanced 5339 for PC/XT/AT     | 79   | 69   |

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| Fujitsu 360K XT/AT | \$75/85 | \$69/79 |
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| Everex Excelsior 80286-8MHZ             | 319     | CALL      |
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| EGA/CGA/Mono/Herc Emulation             | 159     | 135       |
| Everex Magic-16 AT Multifunction Card   | 295     | CALL      |
| Everex PC/XT/AT EMS-Lotus/MS/Intel Card | 235     | CALL      |
| Everex 60MB Tape Backup Kit Int./Ext.   | 695/749 | CALL      |

### MISCELLANEOUS

|                                                                                                                                                                                                                    |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| XT Case                                                                                                                                                                                                            | \$35          |
| AT Case                                                                                                                                                                                                            | 69            |
| XT 150 Watt Power Supply                                                                                                                                                                                           | 48            |
| XT 200 Watt Power Supply                                                                                                                                                                                           | 69            |
| AT 200 Watt Power Supply                                                                                                                                                                                           | 69            |
| Logimouse C-7 Plus                                                                                                                                                                                                 | 69            |
| 6/10' Printer Cable                                                                                                                                                                                                | 6.50/9.50     |
| IBM PC. DOS 3.2                                                                                                                                                                                                    | 69            |
| IBM PC. DOS 3.3                                                                                                                                                                                                    | 95            |
| MS DOS 3.21 w/GW Basic                                                                                                                                                                                             | 69            |
| Surge Protector w/6 Outlets                                                                                                                                                                                        | 12.95         |
| 80287-10 Math Co-Process                                                                                                                                                                                           | 279           |
| 256 K-80 Ns Memory Chips                                                                                                                                                                                           | 45 a set of 9 |
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| Western Digital WX-1/Cables                  | 85    | 75    |
| Western Digital WX-2/Cables                  | 79    | 69    |
| Seagate Controller for Seagate for Hard Disk | 69    | 59    |
| Western Digital WAH/Cables                   | 129   | 119   |
| Western Digital 27X/Cables                   | 99    | 89    |
| Western Digital RA-2/Cables                  | 169   | 159   |
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| Paradise EGA Card, Autoswitch (Res. 640 x 480)              | 225     | CALL      |
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| Monographic Card w/Printer Port (Hercules Compatible)       | 59      | 49        |
| Color Graphic Card w/Printer Port                           | 59      | 49        |
| Multi I/O Card/Cables & Floppy Disk Drive Controller        | 69      | 65        |
| 6-Pack Multifunction Card, 384K (with 0K)                   | 69      | 65        |
| 576 Memory Card (with 0K)                                   | 45      | 39        |
| DIO for PC/XT/AT (S/P/G Ports)                              | 59      | 49        |
| AT Multifunction Card w/0K                                  | 119     | 105       |
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# Computer Learning Month

## *Better Tools For Education*

By Mary Eisenhart

"When you get out into the everyday world, unless you're getting into the MIS department, no one [at your school] is going to sit there and say, 'You definitely will have to use a computer.' But the fact remains that more and more offices, more and more businesses, one way or another, are integrating computers into business. Even if they haven't chosen to go into 'computing,' most people are going to be touched by it. Whether or not your job description says you're going to be sitting in front of a computer, it really is an important tool."

—Cathy Carlston



PHOTO: MARY EISENHART

Of computers in education, Brøderbund's Cathy Carlston remarks, "Computing has expanded the students' world, and the possibilities seem endless."

### COMPUTER LEARNING M O N T H

Cathy Carlston is the vice president of educational market planning at Brøderbund Software; she's also a spokesperson for Computer Learning Month, an October campaign by an unprecedented industry-wide consortium to foster awareness of computers in the learning process.

There's a zeal about the Computer Learning Month effort that goes beyond a certain enlightened self-interest (as Wozniak and Jobs discovered, today's first grader is tomorrow's user — and co-adventurer) into an evangelistic fervor for improved education and ever-expanding possibilities.

CLM began 18 months ago with a discussion among some Software Publishers' Association members; over the months the idea gathered momentum and garnered an impressive list of sponsors (Apple, IBM, Tandy, and scores of software houses) and support, including a joint resolution in support of the program by both houses of Congress.

"It's been a real joy, working with

some very talented people who just also happen to be competitors," says Carlston. "It's also given us a chance to really try to support, as a group, the educational community. This is something we hope will be an annual event, just the beginning."

A host of local, statewide and nationwide activities are being planned in support of Computer Learning Month. A national contest being held at primary, middle and secondary school levels will offer prizes in five categories: computer-generated art, non-computer-generated art about computers, essays about computers, group projects and teachers' lesson plans. First prize at each level in each category is a complete workstation (of choice, from the participating hardware manufacturers) to the individual winner and the winner's school; second prize is a complete software library, also for the winner and the winner's school. Other activities include parents' nights in their children's schools and the preparation of a time capsule of student computer activities to be opened in the year 2001.

Many informational resources for teachers and parents will be available from a variety of sources — for example, a free 16-page booklet call-

ed *What Every Parent Should Know About Educational Computing* is being distributed at Walden and other bookstores.

"Computers," says Carlston, "can be very social. They can help people communicate, they can help people enjoy things." A major focus of the informational campaign is to dispel some of the negative myths about computers that still lurk in the minds of many Americans — teachers kept from utilizing the computer as a tool by their fear that the machine is out to replace them, parents afraid their child is going to grow up a bizarre outcast, children told from birth that computers are not for them.

A particular strength of computers in education, whether at home or in the classroom, is their infinite patience and instant responsiveness — the computer will just keep prompting the child for a correct answer, and will also catch mistakes immediately, before they can be reinforced by repetition. And, perhaps more importantly, the computer lets the fearful student make mistakes in blessed privacy: "They know," Carlston says, "that the computer isn't going to jump at them, yell at them, or point things out to other students."

The SPA is also using this opportunity to address the issue of unauthorized software copying by teachers, which, according to Carlston, is probably far more extensive than copying in the consumer marketplace. She's not unsympathetic to the teachers, but would still like to see an end to the problem: "When it's for the good of the kids, if you're a good and resourceful teacher, you'll do whatever you have to do in order to teach better. I understand that, but I also still don't think it's right."

She adds, "Copy protection has given us nightmares. You get bugs left and right. If people would just promise not to pirate, we'd take the copy protection off, we could lower the price of the software, we'd all be happy. But," she shrugs and laughs, "it's not a perfect world."

One of its other notable imperfections is the widening gap between the computer haves and have-nots among the school districts, creating the by-now-proverbial information-rich and information-poor. Addressing the issue of equal access to computers in education is an urgent focus of this year's campaign.

Carlston cites a videotape she's seen recently of one of Apple's ACOT (Apple Classroom Of Tomorrow) sites — a fifth-grade classroom in an economically-deprived Memphis school. To be sure, after one year with computers in the classroom and at home, the students' test scores improved by more than two grade levels over their previous year's scores. But that's the least of the transformations, she says. "It's pretty amazing. The kids are saying, 'Well, maybe I'll be a lawyer,' or 'Maybe I'll be a doctor,' or 'Maybe I'll be an astronaut.' And the next clip is the parent saying, 'I can't tell you what this has done to the confidence of my child.' They feel that they don't have limits, whereas before they put limits on themselves, the way they viewed themselves and their own capabilities. All of a sudden, computing has expanded their world, and the possibilities seem endless." (For more information about Computer Learning Month, write P.O. Box 19763, Washington, DC 20036-0763, or call 202/223-4338.) □



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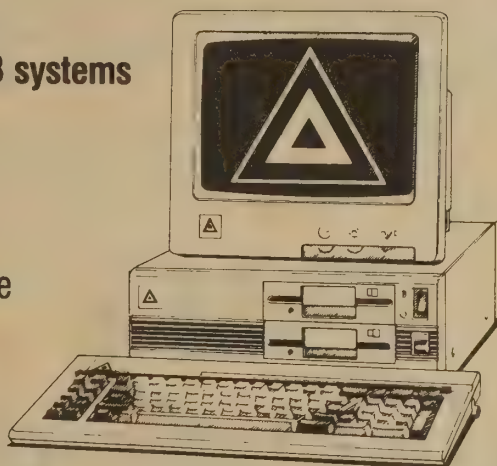
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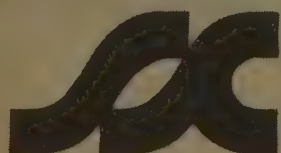
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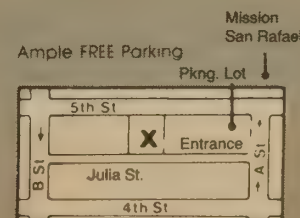
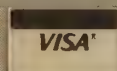
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# COMPUTER LEARNING MONTH

**O**n August 4, IBM announced a new addition to its new Personal System/2 line of computers. Dubbed the Model 25, the computer had a distinctive look and high quality graphics, and was, according to its creators, designed to appeal to students, teachers and administrators.

Since the educational marketplace, particularly K-12, is heavily dominated by Apple computers, some wondered about IBM's foray into such an entrenched market. To answer this question, as well as to get a closer look at the thinking behind the Model 25, *MicroTimes* talked with Jerry Caldwell, the Manager of Marketing Programs and Support for IBM's Educational Systems, based in Atlanta, Georgia.

According to Caldwell, IBM is hoping that its special school prices, compatibility with the PS/2 line, classroom networking ability and extensive courseware will make a place for the Model 25 in the nation's classrooms.

**Why is IBM suddenly pursuing the educational market so aggressively?**

For some time now, we have been wanting to have a new product, with the latest technology, which would fit nicely into the classroom and have the features, functions and price to make it very attractive and applicable to use in the classroom—either making available the latest educational courseware to students in the classroom, or making various tools available to them.

When the PS/2 family was announced in April, obviously that was the technology that we were looking for. But the Model 30, which was the low end of the line at that time—even with the great price on a promotion basis, it still wasn't quite the low price that we wanted for the classroom.

The Model 25 is something we have been working on with our development people for months. It has the features and functions that make it an outstanding product for the classroom at the price that we really wanted to have—we wanted to have a color model for around \$1,000, and that's about where we ended up.

**What features do you think will appeal to the schools?**

One of the things that you would point out first is that it is fully a



IBM has strengthened its hand in the educational marketplace with the Model 25, the newest member of the PS/2 line. IBM is hoping that the special educational applications it is offering combined with the Model 25's ability to network at the classroom level will appeal to school districts nationwide.

## IBM's Educational Marketing Push

By Robert Beauchamp

member of the Personal Series/2 family. An awful lot of people in the schools want to have the latest in technology, and they want to have something that they feel that they can invest in, that has a future and won't be obsolete any time soon—and that the programs they have will be able to be updated and available for a long time.

The graphics, from an educational standpoint, are very important. Most of the schools we talked to are going with the color models, because of the way they demonstrate the courseware and take advantage of the graphic capability. It's the same graphics that are available with the PS/2 family. People have told us that they don't see anything that equals that graphic capability.

From our standpoint the [Model 25's] performance is very fast. It has the same basic processor as the

model 30. It's a very high performance box running at 8 MHz. It has a lot of other little things that we worked with to make it good for schools—not big things in and of themselves, but the kinds of things schools want. One of the things, for example, is the very small footprint. The footprint on the Model 25 is less than 10" x 20"; that's a fraction of the size of many systems that have gone into the schools before. They have just a plain space problem in the schools.

It also has very low power consumption, around 200 watts of power, which is again a fraction of what most systems take. It's a small thing, and you can say electricity is cheap, but if you have a number of systems and add that up over a year's time, you're going to get big savings out of that.

It has a single power cord into the wall. We have a mouse port

which is used with some educational applications. We have what we call a switchless setup, so when the machine comes in you just hook it up and it works immediately. It literally takes about 30

seconds to take it out of the box and set it up. We have a restrainer that you bolt onto the desk, which keeps the computer from wandering off

When you take the speech capability, the way it was designed, the

reliability and a one year warranty right off the bat—many other systems have 90 day warranties—you add all of that up and it's really the system we've been looking for in the classroom.

**What kind of applications do you see being used on the Model 25 in the classroom?**

We have announced what we call IBM Courseware, which covers a number of curriculum areas, such as reading, language arts, math, science, etc. It runs the gamut, from kindergarten through the twelfth grade. Some of it we wrote ourselves within IBM, and some of it we purchased from other people and made it available directly from IBM.

We never envisioned that we would be supplying all the courseware and tools that would be available. There are a number of developers and publishers that are just outstanding in the education field. What we have done is to talk to them about the IBM equipment, the Model 25, the network approach and how it ties in. I'll tell you we have had a tremendous reception from them. What we have told them is that as you develop your courseware, we would like to make it available under this system so the schools can use those packages. We're really excited about the new products that various publishers in the education industry are going to produce, outside of the things that IBM has announced as being from IBM itself.

**How does networking in the classroom work?**

From our experience in working with the schools, we are, in 99% of the cases, recommending that they use a networked approach to installing the PS/2 family in the classroom. We're talking about hooking however many micros you might want in the classroom, and having a network controller, which is another



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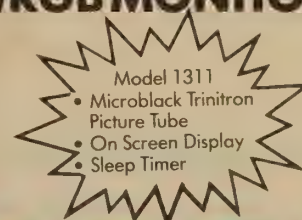
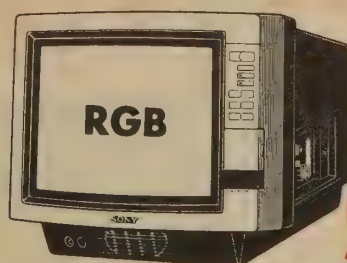
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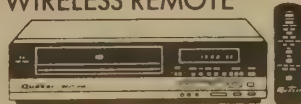
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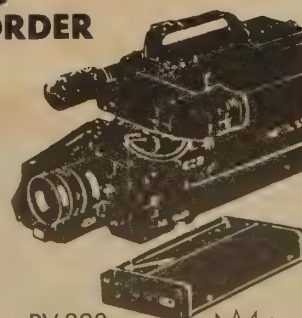


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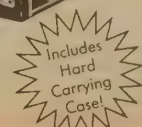
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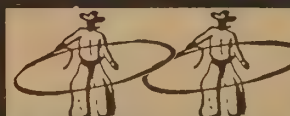
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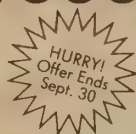
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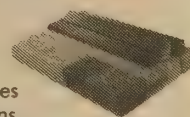
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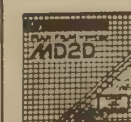
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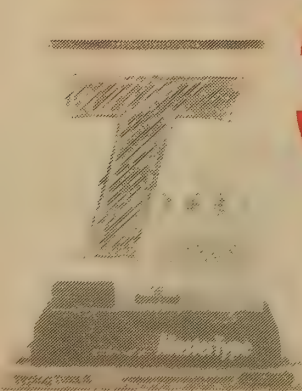


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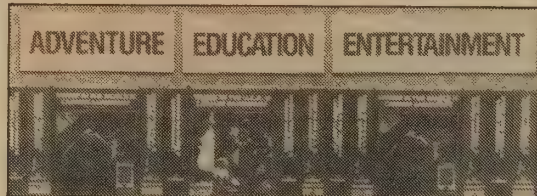
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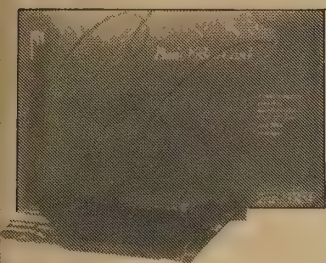
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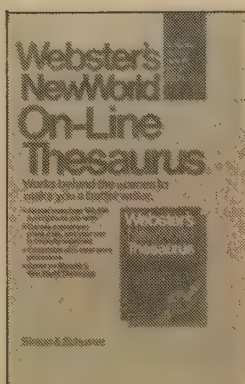
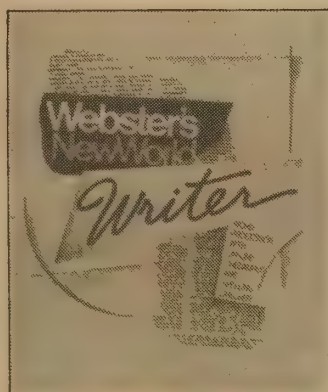
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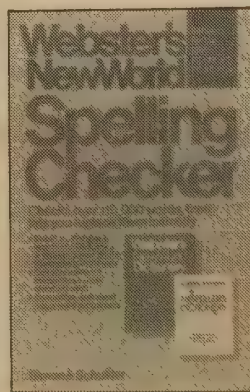
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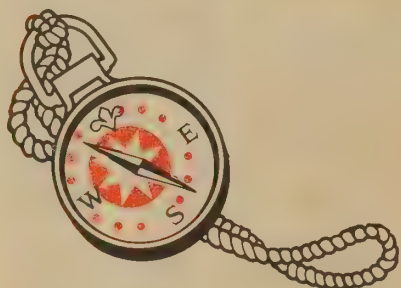
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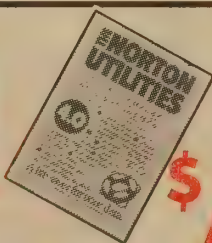
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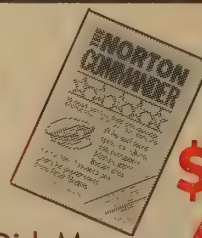
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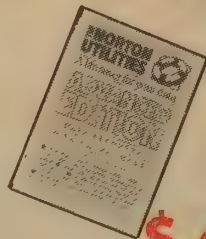
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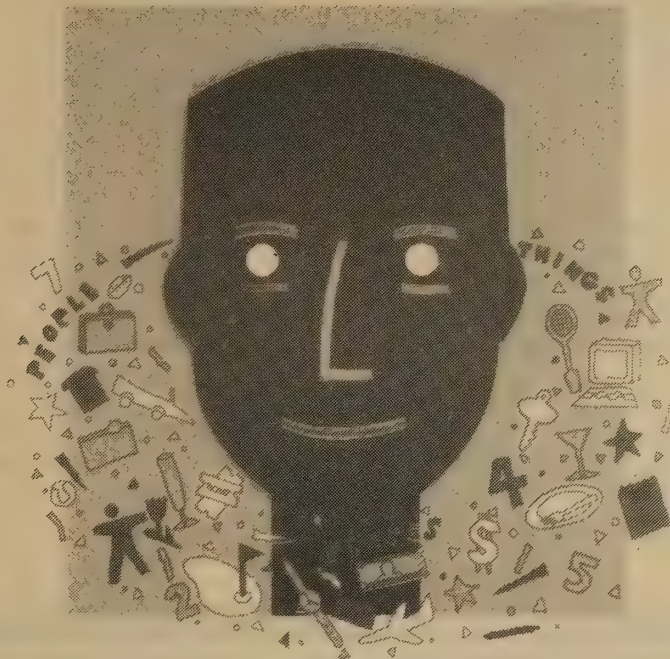
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model of the PS/2 family. The schools that we have installed these in are very excited about how well this works in the classroom.

The concept here is that the tools or educational software the students are going to use are all loaded one time on the network controller; then, when the students sign on the system, they have access to all of these tools, as the software is just sent down the network. There are a lot of advantages to this; one of them is the reduced media handling. But it goes beyond that in terms of the teacher's ability to monitor the educational process. Any data that you want to collect, as far as results and tracking of students' progress, are handled nicely with a networked approach. We have a program that we call the CLAS product that the teacher uses to communicate with the network.

The combination of all this is a system that is very sophisticated but very easy to install and to use.

#### **How are you marketing the Model 25 to the schools, to make it appeal to a school district administrator?**

We have invited school officials in from across the country to demonstrate the new model and to demonstrate the network to them. That is an ongoing effort. We go to the education business shows year round.

IBM also has a closed circuit television network called FTN or Field Television Network. We have downlinks from the satellite in all the IBM branch offices around the country. One of the things we're beginning to use more and more is that particular medium to originate a broadcast and invite school officials and teachers and principals in to view it. That way we can reach literally thousands of people who want to get the information in a quality setup. It is very efficient for both them and us.

#### **What's your strategy for competing with Apple and Tandy?**

Our approach, I think, is to try to earn the business. We try to have the equipment, the products and the courseware that are the best in the education industry. We feel that our best bet is to do the best we can to provide quality offerings in the classroom, and have the kind of education and support that people would expect from IBM. We do that more than focusing on individual competition, of which there is plenty in the school marketplace.

#### **What kind of response have you been getting?**

I would say we've had a very good reaction. It's funny how each of the features is important in a dif-

ferent way to different school systems. People have been telling us that it is the system they've been looking for.

August is a slow month; it's probably the slowest month in the year, but obviously we've had a chance to call on most schools and talk to them about it, and, to be honest with you, I think they share our enthusiasm for the features of the system. They would have been very disappointed if it had not been in the PS/2 family.

#### **What advantages does the Model 25 offer to the teacher and the administrators?**

For the teacher, using the Model 25 with the network approach is a superior way to manage the process going on in the classroom. It really gives the teacher the tools and the time and the ability to set up exactly what he or she wants in the classroom, and then monitor that. It frees up their time to spend more time with the students and attend to the many other duties that they have.

In almost every school, there is a hierarchy of data required. Most of the data is the same and needs to be shared in different ways. This networked approach in the classroom is good on its own merits, but when it links so well to the school level

and to the district level, and in some cases to the state level, that makes it even more important to the administrator.

#### **How do you respond to allegations that IBM has done little in the educational market before Model 25?**

Occasionally we do get a question like that from someone. But, generally speaking, they are glad that IBM has made a commitment to education.

But it is not just a recent thing. It goes back into the typewriter days. For many years we've had computer assisted instruction, and early experiments with that. We have also been working with schools to implement systems for a long time.

In more recent times we have become quite active in the literacy area, even well before announcing the PS/2 family. One of the manifestations of that was the Writing To Read program, which is installed in kindergarten and first grades in every state in the Union.

We have done a number of things using the PCjr as an early system; much of the courseware that I mentioned earlier was available for it. We completely sold out our inventory of those this year. We feel that we have a large commitment to education and we don't feel that it's just a recent thing. □

## **Writing To Read: IBM's Landmark Literacy Program**

*Writing To Read* is a computer aided literacy program developed by IBM and Dr. John Henry Martin, who has over 35 years of experience in the area of children's learning. *Writing To Read* is now in place in kindergartens and first grades in every one of the United States. A version of *Writing To Read* for adults and adolescents, called PALS, is available in high schools, community colleges and community centers.

*Writing To Read* has been studied and evaluated by the Educational Testing Service of Princeton, New Jersey. In its 1984 evaluation of *Writing To Read*, it concluded that the program did indeed produce students who were better able to read and write than their peers who did not take the course. It also concluded that the technology—computers, workstations, keyboards and tape recorders—were easily handled by the children, and any expected problems with the technology either did not exist or were overcome early in the program.

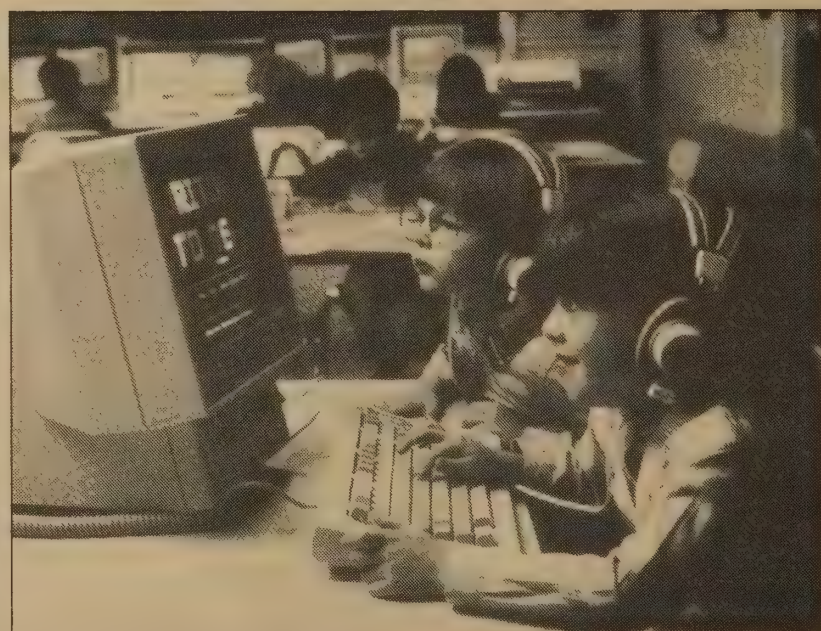
The program itself is designed to teach young children how to write what they can say and how to read what they write. *Writing To Read*

uses a phonetic alphabet to teach students to focus on how individual letters represent sounds which produce words, and how words produce sentences. The children soon learn that the sentence they see on paper is "talk" written down.

The computer equipment from IBM consists of a personal computer, with a digitized voice attachment which enables the computer to "talk". Its natural sounding "voice" and interactive programming helps student learn the sounds of the English language. The keyboarding station allows the students to create words faster and easier. Since they don't have to worry about creating each symbol by hand they can build speed in letter recognition and word formation.

Another advantage to this method is that it encourages a focus on thought, rather than than motor skills needed for writing. Soon after their introduction to written language, students begin to view writing as a means of communicating a thought or message. Many students actually progress to the level of writing stories.

It should be noted that even



*Writing To Read* is a literacy program wherein students at the kindergarten and first grade levels learn to read with the help of computers.

though students learn with a phonetic alphabet and use a keyboard, regular spelling and handwriting skills are stressed. According to the ETS evaluation, *Writing To Read* students were just as proficient at "book" spelling and hand writing as their peers who were not in *Writing*

*To Read*.

According to Jerry Caldwell of IBM's educational division *Writing To Read* not only teaches students how to read and write at a primary level, but it also gives them a life-long interest in reading.

—Robert Beauchamp



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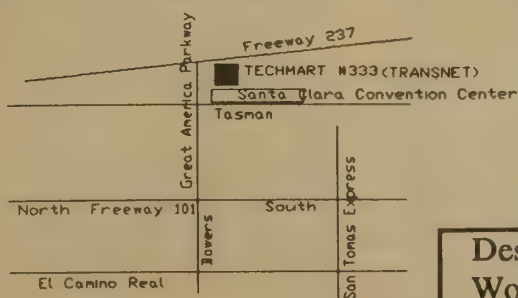
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# Toward Equal Access To Classroom Computing

By Ruth Samberg

**T**welve years after the birth of the microcomputer, 12-year-olds are the first generation to grow up with the constant presence and pervasive influence of computers. The EQUALS In Computer Technology program at the La-

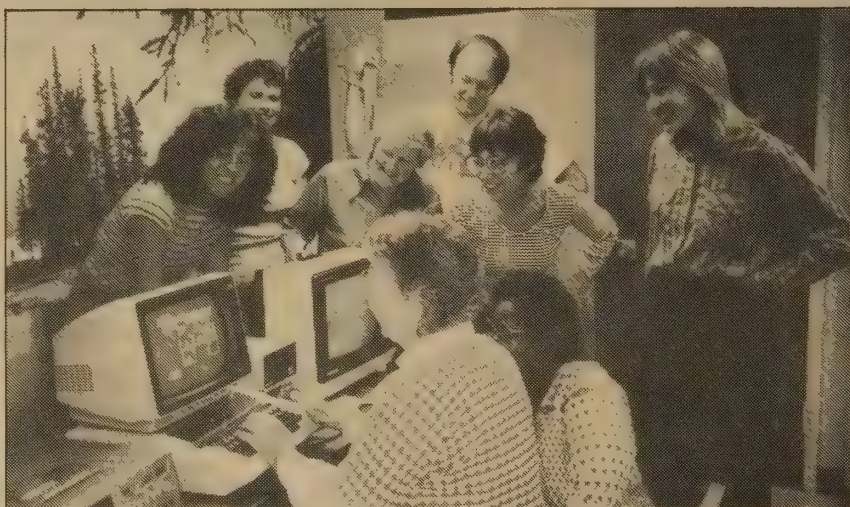
## COMPUTER LEARNING MONTH

wrence Hall of Science is working with parents, teachers, and administrators to bridge the gap created by the sudden influx of computers into schools and workplaces. EQUALS In Computer Technology presents a five-day seminar about effective computer learning.

According to Kay Gilliland, director of the EQUALS project, the development of wider uses for computer technology in professional fields is severely limiting choices for many career-oriented people who opted out of computer training in their earlier school years. Now more than ever, even in non-math-based fields, children's futures depend on their ability to integrate computer use into everyday life.

The advent of computers into schools has often caught teachers unprepared. Now 92% of the nation's 78,000 school districts have computers for instruction, but only 14% have developed policies about how this technology is to be used to improve instruction. Gilliland warns that "just as computers are going into all fields of work, they are going into all fields of study." According to Gilliland, the computer becomes a tool in social studies, in math, and in writing. If computers are treated as a subject of study, they may end up replacing activities that we know are important for little children, like finger painting or playing with blocks. Likewise, high schoolers might be better off taking physics, using computers as a tool, rather than taking computer science. Universities are now recommending that students wait until college to learn computer science.

However, if computer education is deferred until college, not all students will benefit from it. Surveys show that math-based and computer-based fields are heavily dominated by majority males and that this trend begins in the school years, as this relatively advantaged group is most likely to be exposed to



EQUALS staff members (rear l-r: Sherry Fraser, Ellen Humm, Kay Gilliland, Tim Erickson, Nancy Kreinberg; front l-r: Jean Stenmark, Ruth Cossey, Helen Raymond) work to give students equal access to computer education.

computers outside the school environment. The Engineering Manpower Commission is reporting virtually no increase in the percentage of bachelor's degrees in engineering given to women from 1974 to 1984, varying from less than 1% to as high as 10% in some fields.

"Our whole society tells girls that computers are not for them," Gilliland says. Many hardware manuals start every chapter with a glossy picture of a man, the magazines that are put out for engineering and math-based subjects are very male-dominated, and TV role models in these areas are nearly all men. Correcting this imbalance will require that schools provide guidance to all students alike in computer learning.

EQUALS began when Lawrence Hall of Science's Nancy Kreinberg determined to draw more girls into the LHS classes after finding that even a stereotypically female class like Kitchen Chemistry was filled with little boys. Kreinberg proposed a "Math for Girls" class, which was doubtfully received but proved to be a great success; the class was later extended to focus on minorities as well. In order to reach more children, EQUALS also started a program to address teachers; the first such computer class was taught in 1984.

For both students and teachers, the EQUALS classes have three primary areas of emphasis: 1) awareness, 2) competence and confidence using the computer, and 3) encouragement. The teacher needs to be aware of the importance of computers, and also needs to transfer that awareness to the student. Competent teachers are the best role model; children will imitate the skill and confidence of their teacher. The

teacher who is insecure will probably delegate the student who is most knowledgeable to operate the equipment, putting those with less experience at a further disadvantage.

Teachers are encouraged to get out their misconceptions in a positive manner. One exercise begins with teachers expressing their impressions of statistics in technology. Participants wear questions on their backs like "What percent of biology teachers use computers in their classrooms?" Without seeing the question, they gather five answers from the group. Then they read their question and discuss the disparity between what they thought the answer might be and the actual answer (22.6%). The advantage of this approach, says Gilliland, is that it eliminates misconceptions without putting the responsibility for that misconception on any individual and without embarrassing anybody. Teachers can modify and take back this kind of activity for their students.

"The minute teachers become aware of the issues, they begin to think through things they do in class that could change," Gilliland says. The goal is to include all students, to get them motivated and excited about using computers to learn. The teachers who attend EQUALS seminars go back to school inspired—with impressive results. Studies indicate that a teacher's attitude toward computers makes an enormous difference: in one survey, the number of boys in three classrooms surveyed who liked or disliked computers was fairly constant; the same study showed the girls in one class strongly liking computers and those in the other two mostly disliking them.

The Lawrence Hall of Science's book *Off And Running* is a guide to involving kids with computers in a fun and constructive way. Author Tim Erickson took offline activities and wrote a story around each one, with instructions and materials. This book is interesting to children. It teaches logic and basics of computers like operators and Boolean algebra. There are a few activities that would interest third and fourth graders, many for fifth to tenth graders, and some to challenge the inquisitive adult.

This kind of material involves and motivates students before the "age of avoidance" in seventh and eighth grade. Gilliland says "The earlier kids know that they can have power over the machine, the earlier they are going to form their opinion of themselves as computer users. Students who opt out will still know they are capable of commanding and operating computers and can go back to them. If we don't start them early, and they hit those years then, when they might go back, they won't, because they don't have the background. By not taking computer science advanced placement, by not taking the math, girls are opting out of the most highly remunerated jobs and the very interesting jobs."

The LHS research shows, in districts where the EQUALS project has been used, enrollment by girls and minority students in computer related courses is up. With confidence, the young student can become familiar with computer use as a tool before studying in high school. Later she can use computers to excel in study without replacing other curriculum.

EQUALS has been very well received. There are 15 national sites with programs educating up to 60 teachers per session. In addition, Gilliland is responding to interest in the program around the world. Three years ago workshops were held in West Berlin and in Denmark, and last year Kreinberg and Gilliland conducted workshops in the Netherlands and in Germany.

EQUALS has received an NSF grant to work intensively with six local school districts in the Bay Area, and teacher seminar dates will soon be announced. Announcements are distributed to schools and previous participants; other interested parties can call the Lawrence Hall of Science at (415) 642-1823 and ask for the EQUALS office to request further information. □



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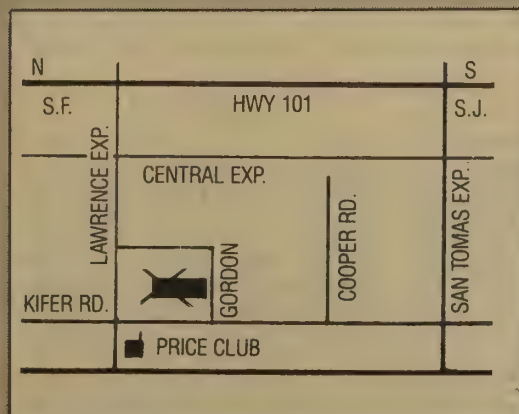
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## Three Approaches To PC-Fax

By Ken Milburn

Last month, I talked about the pros and cons of incorporating facsimile into your PC. In the interim, I've been using three products on an everyday basis. Although I haven't yet had time to test all the features of each card and its attendant software, I thought it would be worth reporting my initial impressions.

The products we've used are the Datacopy MicroFax, a "background" card with its own processor and a built-in Hayes compatible modem, the Panasonic FAXPartner, and the GammaLink fax board that comes packaged with a turn-key graphics/publishing system from Advanced Vision Research.

We installed these cards in both an 80386-based machine (Micro 1/Intel) and an 80286-based machine (the Tandon PAC 286). All of them are advertised to work well in ordinary PC/XT-type machines as well.

If businesses are expected to adopt them, fax cards should be as easy to operate as a standalone fax machine. Once they were installed, all the cards we tested met that criterion. In all three instances, sending a fax is a matter of "picking and clicking" what, where and when from on-screen menus: the source (file or scanner), destination and time for transmission.

There are trade-offs in the use of a standalone fax vs. one that's integrated into your PC. A standalone machine incorporates its own scanner and printer. To duplicate its operation on a PC, you'll need a full-page scanner and a graphics printer (preferably laser). That can make it an expensive proposition unless you need these devices anyway for graphics and desktop publishing.

When you add a computer and software, it is possible to automate sending of multiple files to multiple destinations. You can also transmit and receive while the machine is unattended at pre-programmed hours (i.e. when lines are busy and rates are lowest). Finally, adding the PC allows you to integrate fax with graphics applications, scanners and lasers. That means you can create an image in San Francisco, have it modified in Los Angeles, make last minute changes in Cairo and send it to Paris for final approval. All within minutes.

Although operations are simple, installation (especially in a graphics workstation, where a number of serial ports and slots are already in use by digitizers, plotters, modems and display cards) requires some careful planning ahead. Hint: make a note of all the memory addresses already used by the aforementioned accessories. Or you might consider a complete turn-key system, all pre-configured at the factory, like the Advanced Vision bundle.

There seems to be no such thing as a fax card that supports all scanners and lasers. H-P LaserJets (and compatibles) are almost universally supported, with PostScript printers running a close second. Most fax cards support only one

or two scanners. Most non-aligned fax card makers support the Canon IX-12. Scanner producers who sell fax cards mostly support their own scanners, as is the case with Datacopy and Advanced Vision Research.

I did most of my testing with the help of an engineer friend, Jim Coe. Jim runs a microcomputer consulting business out of his home in nearby Mill Valley, so it was easy for us to run back and forth to check out hardware and to make as many toll-free phone calls as necessary.

Since both test sites were equipped only with single phone lines, which we had to use for both voice and fax, we often found it necessary to turn off the automated background capabilities of the Datacopy and Panasonic cards. That's because a card operating in background mode will automatically answer and deal with incoming transmissions. It can do that only if you don't grab the phone first. If you're unwilling to install a separate line, the card hangs up your phone when it doesn't hear a modem tone after answering.

On the other hand, if you are (or will be) willing to install a separate line for FAX, "background" cards offer some distinct advantages. You can "broadcast" messages to a number of recipients while using the same machine for other business chores. If you plan to use background mode, look for a card with its own memory and processor. These cards least affect the performance of foreground applications.

The FAX Partner does need some PC RAM to keep a portion of its code memory-resident, so don't plan to use other MRPs at the same time. Most professional graphics packages won't leave you room for them. Also, you won't be able to "pop up" the FAX Partner menu while in high-resolution graphics modes. With AutoCAD, we found we had to exit to the main (text only) menu. That's not as restrictive as it sounds, since Panasonic provides an outboard LED box to let you know when messages are being sent and received.

Both the FAX Partner and the Datacopy use PC Paintbrush+ as the "default" graphics editor. Paintbrush's capture utility, Frieze, will convert screens created by any MS-DOS application to fax image file format—so long as your display is EGA, Hercules, CGA or MDA. So far, analog displays aren't supported, so you won't be able to use FAX Partner with any of the PS/2 series.

Datacopy's software doesn't go as far in automating fax operations as Panasonic's. You can't poll possible receivers and you can't broadcast to more than five destinations per list, for instance. On the other hand, Datacopy provides more options for software to control image preparation, especially when used in conjunction with any Datacopy Series 700 scanner. If you want to combine text and graphics from a variety of applications, those with a Hercules display can use the WIPS editor. Or you can use PC Image, which runs under Windows, thereby supporting any display, pointer or hardcopy device that Windows supports. Datacopy can also supply character-recognition software that can be trained to read nearly any font. Datacopy scanners can be used with Microtek's CADmate

software to convert a fax-received image into an object-oriented line drawing (AutoCAD.DXF format). Finally, Datacopy offers PCImage, a bit-mapped image editor that runs under MS Windows for integration with PageMaker.

Advanced Vision Research integrates the GammaLink fax card into an integrated graphics workstation. It includes an AT-style computer, Canon-based laser printer, Wyse 700 high-resolution white-phosphor monitor, AVR scanner, Logitech mouse, and Megabuffer, GammaFax and LaserDapter hardware.

The user interface for AVR's fax and scanner software is GEM, an icon-based environment already familiar to many graphics users. GEM is much faster than Windows and makes it possible to smoothly integrate scanner and fax functions with Ventura Publisher and other GEM-based graphics applications like Draw, Paint and WordChart. Also, like Windows, GEM incorporates a Virtual Device Interface (VDI) so that any printer, monitor or other accessory that works with one GEM-specific application will work with any of the others.

The weakest link in the AVR system is the GammaFAX board provided with it, since this board will not operate concurrently with non-fax foreground applications. That caveat aside, this is the most graphically powerful system available.

The Advanced Vision system lets you laser-print a full page of combined graphics and text within 10 seconds of scanning, composing or receiving it by fax. You can design and compose "published" pages using the Times, Helvetica, Bookman, Courier, Epson, Report, Title and Olde English fonts, combining text and graphics on the same page. You can receive a bit-mapped fax image and automatically convert it to an object-oriented GEMDraw image, which can then be re-scaled, stretched or rotated without loss of definition, then re-insert that image into another document.

AVR software also lets you automatically convert images from 200 dpi CCIT fax format to 300 dpi laser quality output. Finally, AVR's optional OCR software can be trained to recognize laser "typeset" fonts and will allow you to specify an unlimited number of "read" windows on a page.

Since I don't have the use of a Wyse model 700 monitor at the moment, we couldn't test all of the AVR system thoroughly. One's on its way though, and when it arrives we plan to do a hands on feature evaluating the entire system more carefully.

It's still early in the PC-fax/scanner/laser game. Each of the systems tested has uniquely desirable features. None has reached fax-utopia. Of the systems we were able to check out, Panasonic offers the best background operation and highest level of transmit/receive automation. Datacopy offers the greatest flexibility for integrating fax into existing hardware and graphics systems. Advanced Vision makes the most powerful all-around system for integrated graphics and publishing. If desktop publishing is (or will be) important to you, the AVR system integrates best with Ventura Publisher; the Datacopy system will integrate best with PageMaker. □



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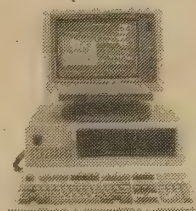
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# How Fast Is It?

## Benchmarking The Compaq 386 And The Sun 3/50

By Bennett Falk

Nearly a year has gone by since the introduction of the Compaq Deskpro 386.

And today, despite the avalanche of ballyhoo, hardly anyone knows just how powerful a machine it really is. Software to exploit the full capabilities of Intel's 80386 processor is not yet plentiful. Certainly, 386-based machines run DOS applications faster than any of their predecessors, but that's no surprise. Being faster, they are also more difficult to time with a handheld stopwatch, the traditional tool for DOS performance measurements.

The Motorola 68020 processor has been around a little longer than the 80386. Like the Intel chip, it has 32-bit architecture and is designed to run at speeds from 15 MHz up. Unlike those with Intel chips, computers based on the 68000 family have run a bewildering variety of operating systems, including a number of UNIX implementations. Widely recognized as a good processor for multi-user systems, the 68020 chip has spent most of its commercial life to date buried in computers larger than a desktop.

With Apple's 68020-based Macintosh II and big price cuts on Sun Microsystems workstations, the 68020 is beginning to acquire a much wider audience. Consequently there has been considerable interest in comparing 386-based computers with 68020-based computers, but without a common operating system, the comparisons that have been made so far (for example, see the article "High Tech Horsepower," BYTE, July 1987) have been more or less limited to measurements of processor performance only. Now that UNIX is available for the 80386, it is possible to benchmark these machines as complete systems.

### UNIX Benchmarks

The idea that UNIX can provide tools to measure hardware performance is hardly new. In August of 1984, BYTE published "Benchmarking UNIX Systems", an article by David F. Hinnant in which fifteen mini- and micro-computers of wildly varying capabilities (from the Apple Lisa to a VAX 11/780) were put through a suite of eight tests. Each of the machines tested by Hinnant ran one version or another of UNIX ranging from Version 7 to 4.2 BSD.

Hinnant's test suite included:

1. A "disk write" test to measure the speed with which a process can create a good-sized (130K) file. (Listing 1)
2. A "disk read" test performing 256 seeks to random places in the file created by disk write test and reads of 512 bytes from each of these locations. (Listing 2)
3. A pair of tests to measure the overhead involved in performing a function call in a C program. The two tests each perform 50,000 iterations of a simple variable assignment, though

TABLE 1

|                                               | (All Times in Seconds)<br>(Compaq)(Sun 3/50) |       |
|-----------------------------------------------|----------------------------------------------|-------|
| Executing dwrite                              |                                              |       |
| real                                          | 0.44                                         | 1.66  |
| user                                          | 0                                            | 0     |
| sys                                           | 0.28                                         | 0.54  |
| Executing dread                               |                                              |       |
| real                                          | 0.44                                         | 1.62  |
| user                                          | 0                                            | 0     |
| sys                                           | 0.26                                         | 0.47  |
| Executing fcalle                              |                                              |       |
| real                                          | 0.35                                         | 0.4   |
| user                                          | 0.2                                          | 0.28  |
| sys                                           | 0                                            | 0.01  |
| Executing fcalla                              |                                              |       |
| real                                          | 0.19                                         | 0.13  |
| user                                          | 0                                            | 0     |
| sys                                           | 0                                            | 0.02  |
| Executing loop                                |                                              |       |
| real                                          | 2.06                                         | 2.15  |
| user                                          | 1.9                                          | 1.94  |
| sys                                           | 0.03                                         | 0.01  |
| Executing pipes                               |                                              |       |
| real                                          | 1.41                                         | 3.55  |
| user                                          | 0                                            | 0     |
| sys                                           | 0.6                                          | 1.65  |
| Executing scall                               |                                              |       |
| real                                          | 2.45                                         | 3.73  |
| user                                          | 0.26                                         | 0.69  |
| sys                                           | 2.08                                         | 2.8   |
| Executing sieve (100 iterations 1899 primes.) |                                              |       |
| real                                          | 11.3                                         | 14.16 |
| user                                          | 11.1                                         | 13.19 |
| sys                                           | 0.05                                         | 0.05  |

one uses a function call while the other uses the built-in C assignment operator. The difference in execution time between these tests indicates function call overhead. (Listing 3)

4. A "loop" test, which executes an empty loop 1,000,000 times. (Listing 4)

5. A "pipe" test to determine the speed with which one process can pass 500K of data to another. (Listing 5)

6. A system call test to gauge the overhead of switching to "kernel mode." This is achieved by performing a simple system call 25,000 times. (Listing 6)

7. The ever-popular "sieve" benchmark that identifies prime numbers. The version of this benchmark used below performs 100 iterations of the test rather than the 10 repetitions that

were used in Hinnant's test suite. (Listing 7)

8. A "shell" test which times the execution of a chain of common UNIX commands and simulates a multi-user load. (Listing 8)

In addition to running the BYTE tests, it is also instructive to measure the time required to compile the various tests. Except for the shell tests, the BYTE benchmarks are written in C and should compile without modification on any UNIX system.

### The Machines

The tests were run on two machines: a Compaq 386 and a Sun workstation (3/50). These machines were chosen because they are roughly price compatible representatives of their respective processor families.

The Compaq was equipped with a 16 MHz 80386 processor, an 80287 co-processor running at 8 MHz, 2 MB of memory, and a 40 MB disk drive with an average access time of less than 30 milliseconds. The version of UNIX running on the Compaq is SCO XENIX System V. Throughout the tests, only one user was logged in on the Deskpro 386.

The Sun Workstation was equipped with a 15 MHz 68020 processor, 4 MB of main memory, a 70 MB SCSI disk drive. The Sun machine runs release 3.2 of Sun's port of UNIX 4.2 BSD. As with the Compaq only one user was logged in during the tests.

### The Procedure

A pair of shell scripts were created to run the benchmark suite (Listings 9a and 9b, "run\_run" and "run\_bench.sh"). These scripts were created for this benchmark effort and were not part of Hinnant's article.

The "run\_run" script repeats "run\_bench.sh" ten times and does some cleanup. "run\_bench.sh" first removes any executable files left over from previous runs and then compiles the tests in sequence, recording the time taken by each compilation. Once the tests are compiled, each test is then run once and timed.

All timings were done using the "time" utility, which returns both elapsed time and CPU time. CPU time is divided into time spent executing "system" calls (privileged routines that provide access to resources under the control of the UNIX kernel, usually protected from interrupts) and the time spent executing non-privileged or "user" instructions. Total CPU time for any test is the sum of these two figures.

### The Results

The results of these tests are summarized in Tables 1-3, and the numbers speak for themselves. In each case, the times recorded are averages from ten repetitions of "run\_bench.sh".

Table 1 contains the results of running the programs in Hinnant's test suite. Of the two machines compared here, the Compaq Deskpro 386 has a definite performance advantage on these tests, but this advantage varies considera-

TABLE 2 - Shell Test

|            | Number of concurrent Tests<br>(Times are elapsed time in seconds.) |      |      |      |       |       |
|------------|--------------------------------------------------------------------|------|------|------|-------|-------|
|            | 1                                                                  | 2    | 3    | 4    | 5     | 6     |
| Compaq 386 | 2.2                                                                | 2.12 | 3.34 | 4.34 | 5.04  | 5.93  |
| Sun 3/50   | 4.15                                                               | 5.26 | 8.54 | 9.51 | 12.68 | 14.97 |



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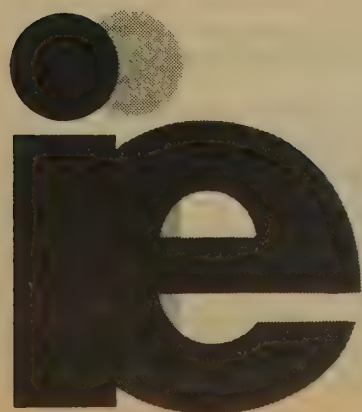
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bly from test to test. The Deskpro running XENIX performs the disk write test in approximately one quarter the time required by the Sun. The machines are closer in the sieve test, which is computation intensive, but the Compaq still performs the test in about 75% of the Sun's time. The only single test in which the Sun bested the Compaq is the "assignment" portion of the function call test.

Table 2 contains the timings for the shell test. On each computer the shell program was run first by itself. For each successive run another process running the same program was added until six copies of the shell test were running simultaneously. Both machines showed some degradation in response time as the loads increased, but the Deskpro posted much faster times for all the various loads performing the tests in 39% to 55% of the Sun's time for the same load.

Listed in table 3 are times for compiling each of the benchmark programs. These are the most striking results produced by any of the tests. The compilation times show the tremendous advantage that accrues to systems which do efficient cache and buffer management.

The compilations consisted of eight successive calls to the C compiler. Compiling the first program, both computers had to load the compiler from disk, and there is a difference between them of roughly .6 second. For subsequent compilations, however, the XENIX system had to read very little from disk, finding much of the compiler code already buffered in memory. Consequently the second call to the compiler took less than half the time required by the first compilation. The Sun 3/50's time also dipped with the second compilation, but not nearly so dramatically. The ability of the Compaq/XENIX combination to pull recently used code from RAM buffers instead of from disk undoubtedly accounts for some of its speed in the shell tests as well.

The results of these tests invite two general comments. First, the Deskpro 386 running XENIX is a faster system than the Sun 3/50. This is not entirely unexpected: the 3/50 is a relatively old product, and a new, more powerful model, the 3/60 has already been introduced. Still, it is surprising that the 80386 based machine is as much faster as the tests show it to be and that this speed is not a function of the processor alone.

Finally, both the machines tested posted faster times than the machines benchmarked in Hinnant's article of three years ago. That in itself speaks very well indeed for the advances in microprocessor technology in the past few years. It is doubly astounding that this level of performance is available for well under \$10,000. □

**TABLE 3**

|                           | (All Times in Seconds) |            |
|---------------------------|------------------------|------------|
|                           | (Compaq)               | (Sun 3/50) |
| <b>Compiling dwrite.c</b> |                        |            |
| real                      | 7.62                   | 8.29       |
| user                      | 1.24                   | 1.41       |
| sys                       | 2.25                   | 1.55       |
| <b>Compiling dread.c</b>  |                        |            |
| real                      | 3.3                    | 7.35       |
| user                      | 1.29                   | 1.51       |
| sys                       | 1.17                   | 1.49       |
| <b>Compiling fcalle.c</b> |                        |            |
| real                      | 2.67                   | 6.93       |
| user                      | 0.7                    | 1.03       |
| sys                       | 1.14                   | 1.39       |
| <b>Compiling fcalla.c</b> |                        |            |
| real                      | 2.54                   | 5.93       |

|                          |      |      |
|--------------------------|------|------|
| user                     | 0.68 | 0.92 |
| sys                      | 1.08 | 1.34 |
| <b>Compiling loop.c</b>  |      |      |
| real                     | 2.73 | 6.65 |
| user                     | 0.75 | 0.95 |
| sys                      | 1.1  | 1.4  |
| <b>Compiling pipes.c</b> |      |      |
| real                     | 3.01 | 6.62 |
| user                     | 1.11 | 1.33 |
| sys                      | 1.11 | 1.44 |
| <b>Compiling scall.c</b> |      |      |
| real                     | 2.63 | 5.73 |
| user                     | 0.67 | 0.92 |
| sys                      | 1.07 | 1.34 |
| <b>Compiling sieve.c</b> |      |      |
| real                     | 3.1  | 6.74 |
| user                     | 1.18 | 1.43 |
| sys                      | 1.09 | 1.45 |

#### Listing 1: dwrite.c

```

/*
Program to create and write a disk file from
the BYTE benchmarks

Compile: cc -O -s -o dwrite dwrite.c

Run: /bin/time dwrite

Notes: elapsed time is the significant measure
*/
#include <stdio.h>
#define BLOCKS 256

main()
{
    char buffer[512];

    char *filename = "a_large_file";

    register int i;

    int fildes;

    if ((fildes = creat(filename, 0640)) < 0)
    {
        printf("Cannot create file\n");
        exit(1);
    }
    else
    {
        close(fildes);

        if ((fildes = open(filename, 1)) < 0)
        {
            printf("Cannot open file\n");
            exit(1);
        }

        for (i = 0; i < BLOCKS; i++)

            if (write(fildes, buffer, 512) < 0)
            {
                printf("Error writing block
                %d\n", i);
                exit(1);
            }

        close(fildes);
    }
}

```

#### Listing 2: dread.c

```

/*
program to read randomly from the file
created by dwrite
another BYTE benchmark program

Compile: cc -DSIXTEEN -O -s -o dread dread.c
for machines with rand() in the 2^15 range

```

or  
cc -DTHIRTYTWO -O -s -o dread dread.c  
for machines with rand() in the 2^32 range

Run: /bin/time dread

Notes: Again, elapsed time is significant

```

*/
#include <stdio.h>

#define BLOCKS 256

long lseek();

main()
{
    char buffer[512];

    char *filename = "a_large_file";

    register int i;

    int fildes;

    long int offset;

    if ((fildes = open(filename, 0)) < 0)
    {
        printf("Cannot find %s. Run
        dwrite first.\n", filename);
        exit(1);
    }

    for (i = 0; i < BLOCKS; i++)
    {
        #ifdef SIXTEEN
            offset = (long)rand() * 4L;
        #endif
        #ifdef THIRTYTWO
            offset = (long)rand() / 16384L;
        #endif

        if (lseek(fildes, offset, 0) < 0L)
        {
            printf("Lseek to %ld failed, i
            = %d\n",
            offset, i);
            exit(1);
        }

        if (read(fildes, buffer, 512) < 0)
        {
            printf("Error reading block at
            byte %ld\n",
            offset);
            exit(1);
        }

        unlink(filename);
    }
}

```

#### Listing 3: fcall.c

/\* Function call program from BYTE  
Compile: cc -O -DEMPTY -s -o fcalle fcall.c  
and cc -O -DASSIGN -s -o fcalla fcall.c

Run: /bin/time fcalle  
/bin/time fcalla

Notes:  
difference in user times (between fcalle &  
fcalla?) in seconds will be a measure of  
function call efficiency.

```

*/
#define TIMES 50000

main()
{
    #ifdef EMPTY
    {
        register unsigned int i;

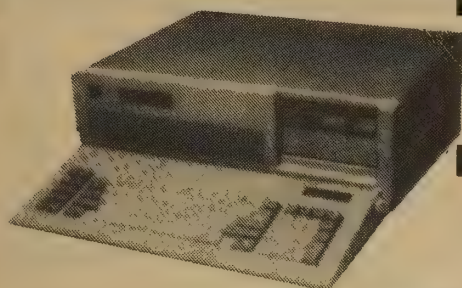
        for (i = 0; i < TIMES; i++)
    }
    #endif
}

```



**The first, last and only stop  
you'll need to make . . . period!**

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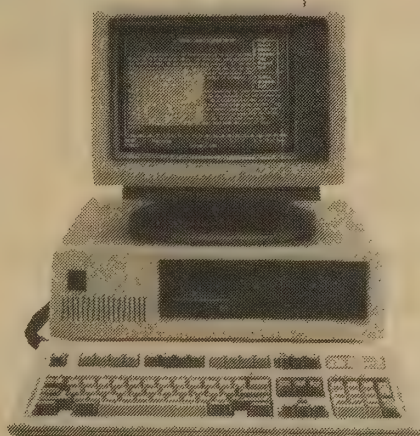
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```

    i = empty(i);
}

empty(k)
register unsigned int k;
{
    return(k);
}
#endif

```

```

#ifdef ASSIGN
{
    register unsigned int i, j;

    for (i = 0; i < TIMES; i++)
        j = i;
}
#endif

```

#### Listing 4: loop.c

a program to test looping and incrementing.  
>From the *BYTE* benchmarks, based on a program from *USENET*

compile: cc -O -s -o loop loop.c

run: /bin/time loop

notes: a historical curiosity according to *BYTE*; is i++ an INCR instruction or an ADD instructions?

```

*/

main()
{
    long i;

    for (i = 0; i < 1000000; i++)
        ;

    printf("Done\n");
}

```

#### Listing 5: pipes.c

/\*  
pipes.c from *BYTE*

Compile: cc -O -s -o pipes pipes.c

Run: /bin/time pipes  
\*/

```

#define BLOCKS 1024

```

```

/* buffer */
char buffer[512];

```

```

/* file descriptor for pipe */
int fid[2];

```

```

main()
{
    register int i;
    pipe(fid);

    if (fork())
    {
        for (i = 0; i < BLOCKS; i++)

            if (write(fid[1], buffer, 512) < 0)
                /* There's an error */
                printf("Error in writing: i = %d\n", i);

            /* Close pipe when finished */
            if (close(fid[1]) != 0)
                printf("Error in parent closing\n");
    }
    else
    {
        /* close since we're not writing */
        if (close(fid[1]) != 0)
            printf("Error in child closing\n");
    }
}

```

```

for (;;)
    if (read(fid[0], buffer, 512) == 0)
        break;
}
}

```

#### Listing 6: scall.c

/\* The "system call" benchmark program from *BYTE*  
Compile: cc -O -s -o scall scall.c  
Run: /bin/time scall  
Notes: Elapsed time is the interesting thing returned

```

*/
#define TIMES 25000
main()
{
    register int i;

    for (i = 0; i < TIMES; i++)
        getpid();
}

```

#### Listing 7: sieve.c

/\* Eratosthenes Sieve Prime-Number Program from *BYTE*  
January 1983  
\*/

```

#define TRUE 1
#define FALSE 0
#define size 8190

char flags[size + 1];

main()
{
    int i, prime, k, count, iter;
    printf("100 iterations\n");
    for (iter = 1; iter <= 100; iter++)
    {
        count = 0;
        for (i = 0; i <= size; i++)
            flags[i] = TRUE;

        for (i = 0; i <= size; i++)
        {
            if (flags[i])
            {
                prime = i + i + 3;
                /* printf("\n%d", prime); */

                for (k = i + prime; k <= size; k += prime)
                    flags[k] = FALSE;
                count++;
            }
        }
    }
    printf("%d primes.\n", count);
}

```

#### Listing 8a: multi.sh

```

: /bin/time /bin/sh multi.sh 1 2 3
: run with process from 1 to 6
for i
do
    echo $i;
    /bin/sh tst.sh &
done
wait

```

Listing 8b: tst.sh  
sort > sort.\$\$ << /\* EOF  
Now  
is  
the

```

time
for
all
good
men
to
come
to
the
aid
of
their
country
/* EOF
od sort.$$ | sort -n +1 > od.$$
grep the sort.$$ | tee grep.$$ | wc > wc.$$
rm sort.$$ grep.$$ od.$$ wc.$$

```

#### Listing 9a: run\_run

```

for i in 0 1 2 3 4 5 6 7 8 9
do
    rm dread dwrite fcalle fcalla loop pipes
    scall sieve
    ./run_bench.sh 1>'uname-|'. $i2>&1
done

```

#### Listing 9b:

```

:
: sh script to compile and run BYTE UNIX benchmarks
:
echo "Compiling dwrite.c"
/bin/time cc -O -s -o dwrite dwrite.c
echo "Compiling dread.c"
/bin/time cc -O -DTHIRTYTWO -s -o dread dread.c
echo "Compiling fcalle.c"
/bin/time cc -O -DEMPTY -s -o fcalle fcalle.c
echo "Compiling fcalla.c"
/bin/time cc -O -DASSIGN -s -o fcalla fcalla.c
echo "Compiling loop.c"
/bin/time cc -O -s -o loop loop.c
echo "Compiling pipes.c"
/bin/time cc -O -s -o pipes pipes.c
echo "Compiling scall.c"
/bin/time cc -O -s -o scall scall.c
echo "Compiling sieve.c"
/bin/time cc -O -s -o sieve sieve.c

```

: Now execute the tests

```

echo "Executing dwrite"
/bin/time ./dwrite
echo "Executing dread"
/bin/time ./dread
echo "Executing fcalle"
/bin/time ./fcalle
echo "Executing fcalla"
/bin/time ./fcalla
echo "Executing loop"
/bin/time ./loop
echo "Executing pipes"
/bin/time ./pipes
echo "Executing scall"
/bin/time ./scall
echo "Executing sieve"
/bin/time ./sieve
: multiple shells:

```

```

echo "Shell 1"
/bin/time /bin/sh multi.sh 1
echo "Shell 2"
/bin/time /bin/sh multi.sh 1 2
echo "Shell 3"
/bin/time /bin/sh multi.sh 1 2 3
echo "Shell 4"
/bin/time /bin/sh multi.sh 1 2 3 4
echo "Shell 5"
/bin/time /bin/sh multi.sh 1 2 3 4 5
echo "Shell 6"
/bin/time /bin/sh multi.sh 1 2 3 4 5 6

```





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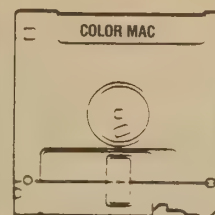
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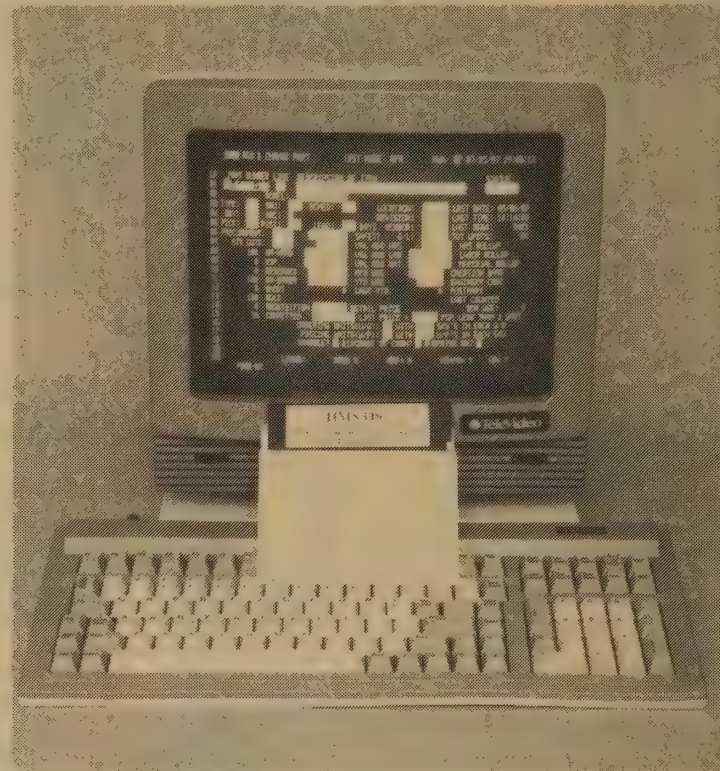
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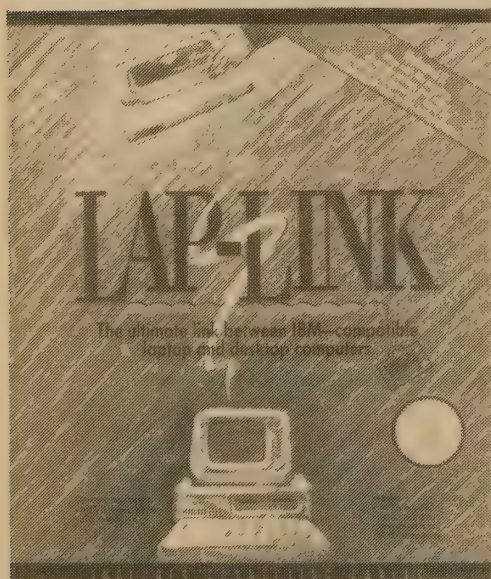
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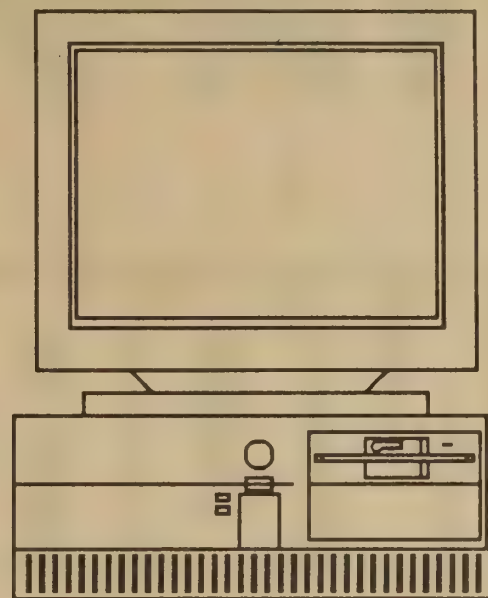
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# MACINTOSH II

## Power, Promise—And A Few Problems

By Jim Wolcott

**T**he Macintosh II signals a moment of truth. This computer represents Apple's next generation of Macintosh computer: still easy to use, still user-friendly, but structured around a massive, open-architecture chassis. Will it be accepted into an MS-DOS business world? Will software emerge to support its abilities? How will it compete against the new IBM machines?

At this point, IBM's OS/2 operating system, the crucial component for harnessing the horsepower of the new IBM personal computers, won't be available for at least a year. The Macintosh II makes use of the existing Macintosh operating system, and is available *right now*.

The potential for the Macintosh II is staggering. For hardware engineers, the Mac II's spec sheets read like a Christmas wish-list. In the world of personal computers, the Macintosh II sets new standards for flexibility and adaptability.

By the end of the year, third-party companies will offer a dazzling array of upgrade cards for the

Macintosh II. AST Research will soon offer an MS-DOS card, allowing MS-DOS software to run within a separate window on the Mac II. Networking cards, high-speed modem cards, and other exotic products are all in the offing.

But all of that is several months down the line. The Macintosh II is in its infancy. The machine has incredible promise and potential, but is cur-

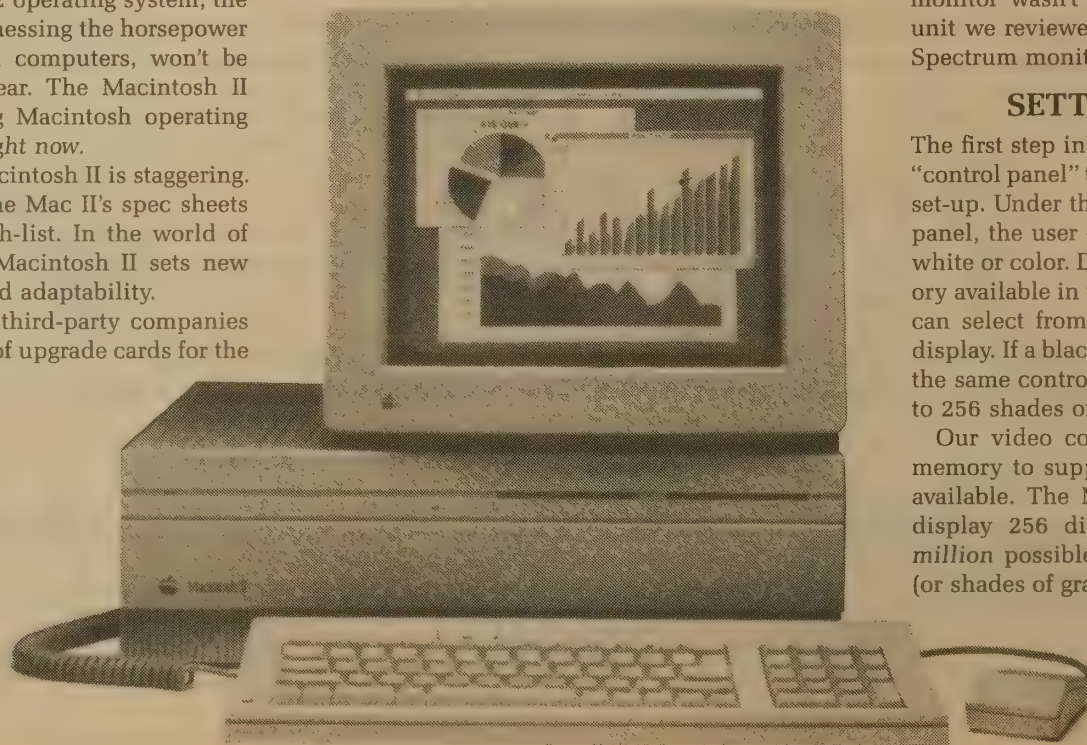
rently offered as a stand-alone workstation. What's it like to use the Mac II right now with the software currently available? What about compatibility? And the color software that's available?

To answer these questions, we obtained a base configuration Macintosh II, with a single 800K floppy-disk drive, one meg of RAM memory, and the Apple Standard Keyboard. Since Apple's color monitor wasn't in production at press time, the unit we reviewed was used with a SuperMac 19" Spectrum monitor.

### SETTING UP A MAC II

The first step in using a Macintosh II is to set the "control panel" to match your particular computer set-up. Under the "monitor" option of the control panel, the user can set the monitor for black and white or color. Depending on the amount of memory available in the video controller card, the user can select from two to 256 colors for the video display. If a black and white monitor is connected, the same control panel is used to select from two to 256 shades of gray for the screen display.

Our video controller card was supplied with memory to support the full 256 colors currently available. The Macintosh II can simultaneously display 256 different colors, selected from 16 million possible colors. The more display colors (or shades of gray) selected, the longer the Macin-





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tosh II takes to "recalculate" changes to the screen. This delay is particularly evident (and annoying) when scrolling in word-processor documents, or when rotating complex objects in a graphics program. We had a chance to compare Apple's video card, with the same amount of memory, to the SuperMac. There was no noticeable difference in speed. For top display speed with the video cards currently available, select the black and white mode with two shades of gray. Of course, faster video cards may be under development.

The video controller card occupies only one of the six available internal expansion slots, and multiple video cards and monitors can be plugged into the other slots. Unique to the new Mac is the ability to configure a multi-monitor system. When more than one video controller card is installed, the control panel offers the option of having separate monitors display separate regions of the video output. For example, a 19" color display might be used to show facing pages with a page layout program, while a 12" black and white monitor could display the pull down menu bar, the page layout toolbox, and a desk accessory or two. The control panel allows the user to define the physical placement of a multi-monitor system. Two side-by-side monitors can be set to display sequential regions of the same spreadsheet or adjoining sections of a large engineering drawing.

### THE 80 MEG INTERNAL DRIVE

Using a Macintosh II without a hard disk drive is silly. Much of the new software available pushes the limits of the 800K floppy drive. Even with a dual floppy Mac II, there simply isn't enough room for the system/finder files and a software application to show off the abilities of the machine.

The Macintosh II is designed to support an internally mounted hard disk drive and can be ordered with a 20 meg, 40 meg, or 80 meg drive unit. We obtained one of the 80 meg units, manufactured for Apple by an outfit called Quantum.

The Quantum drive mounts onto the Macintosh II's sub-chassis: a connector on the motherboard supplies the power, and a ribbon cable links the drive to the Mac II's internal SCSI port. With the internal hard drive installed, the SCSI port on the back of the Macintosh II can be used for additional SCSI devices (hard drives, tape back-up, or CD-ROM devices). Formatted for the Macintosh II, the 80 meg Quantum drive can actually store about 76 megs of data.

As supplied, the Quantum drive is set to SCSI ID #6: the "highest" SCSI priority (the next step higher, SCSI ID#7, is reserved for the Macintosh itself). "Highest priority" means the Quantum drive is the "first" SCSI device addressed by the Macintosh II. If the proper system/finder files are found on the Quantum, the Macintosh II will load those files from the Quantum drive. For compatibility with various SCSI devices, the SCSI ID# can be changed using jumpers on the bottom of the Quantum drive.

We used the 80 meg Quantum daily over a three week period, and never had a bit of trouble. Running DiskTimer II with the drive filled to about 45 megs, the Quantum clocked 100 24KB reads in 54 deciseconds, and 100 24KB writes in 57 deciseconds—performance comparable with SuperMac's Dataframe 40XP.

### USING THE MACINTOSH II

Although the back of the Mac II's cabinet has a power switch, Apple intended that the computer's power be controlled from the keyboard. The power switch is a button at the top of the keyboard. A touch of the button brings on the power for the computer and the monitor. When the internal hard drive comes to speed, the familiar "Welcome to Macintosh" message appears at the center of the screen. Turning off the power for the system

## Unique to the new Mac is the ability to configure a multi-monitor system. When more than one video controller card is installed, the control panel offers the option of having separate monitors display separate regions of the video output.

is controlled by software. Selecting "Shut Down" from the "Special" menu in the Finder shuts off the power for the computer and the monitor.

Once turned on and up to speed, the Macintosh II is loud. In the case of the Macintosh II, it's a one-two punch. The power supply is fitted with a howling cooling fan, and the Quantum internal hard drive sounds like a Lear Jet winding up for take off. Complaints of the Macintosh SE's cooling fan pale in comparison. The Macintosh II with an internal hard drive makes an IBM PC seem quiet.

Fortunately, once the hard drive is loaded with software, there's really no need for the Macintosh II to sit directly in the work area. With the power switch controlled from the keyboard, the Macintosh II can be mounted under a desk, in a closet, or in a soundproof box.

In use, the Macintosh II behaves exactly like its closed-box predecessors. Common tasks such as initializing disks, copying files, using the pull down menus, etc., employ commands common to the Macintosh family. There is one additional feature, however; the "beep" tone can be changed to suit your fancy (including the "screech" of a monkey, or the "boing" of a spring.) This is a curious widget guaranteed to generate disbelieving stares from co-workers.

### MEMORY UPGRADES

Surprisingly, one meg of RAM isn't enough for the Macintosh II to show its stuff. A few of Apple's color demonstrations, particularly the large "floating ball" images processed with Apple's Cray supercomputer, return the depressing "Not enough memory to open this file" message. A memory upgrade is a prerequisite to take advantage of the horsepower afforded by the Macintosh II.

As shipped, the Macintosh II is equipped with one megabyte of RAM memory available via four 256K SIMM (Standard In-line Memory Module) boards. At the present, the SIMM boards are available in two configurations: 256K per board, or one megabyte per board. The motherboard of the Macintosh II is equipped with ports to accept up to eight SIMM boards.

First, we attempted to install Apple's 2MB upgrade kit, consisting of two one-meg SIMM boards. No go. On power-up, the monitor screen stayed blank and the Mac II's speaker played a dissonant little melody to signal its unhappiness with the memory configuration. A frantic half-hour of SIMM-board swapping followed, trying various placements of the two one meg SIMMs and the four 256K SIMMs. Still no go. The only way the Macintosh would boot and run was with its four original 256K SIMMs.

Next, we tried filling all eight of the memory ports with 256K SIMM boards. With this, the Macintosh II started and ran fine: the information window in the Finder confirmed that a full two megs of RAM memory were being addressed (eight boards, at 256K each, equals two megs). The hitch is that the Macintosh II will only address the SIMM boards when installed in banks of four, and all four SIMM boards must be the same size.

This means there are three levels of memory upgrade available for the Macintosh II:

The two meg configuration: locate another four of the 256K SIMMs—although Apple doesn't sell these directly, they are available from third-party developers for around \$500.

The five meg configuration: four of the one meg SIMMs, provided by two of Apple's 2MB upgrade kits. Each kit retails for \$999.00, totaling \$1,998.00. With this configuration, you can re-use the four 256K SIMMs with the four one meg SIMMs for a total of five megs of RAM memory.

The eight meg configuration: to create a full-house Macintosh II, install four of the Apple 2MB kits to fill all eight ports with one meg SIMMs a full eight megs of RAM, for \$3,996.00.

For the balance of our testing, we ran the Macintosh II with eight of the 256K SIMM cards, for a total of two megs of RAM memory.

### WORKING WITH A MACINTOSH II

Apple has been "warning" software developers of the impending changes in the Macintosh II for about a year, and issuing strict guidelines to insure across-the-board compatibility for the Mac Plus, the Mac SE, and the Macintosh II. Software programs which adhere to these guidelines run flawlessly on the Macintosh II. Other programs exhibit anything from minor quirks to instant system crash on start-up. At this point, Apple claims about 80% compatibility with the existing software—a remarkable figure considering the hardware differences in the new machine.

Many recent software packages have already been engineered to take advantage of the Macintosh II. Microsoft has just released Excel 1.04 to support the Macintosh II and Word 3.0 already runs on the new machine.

The old standards of the Macintosh software world, MacWrite and MacPaint, experience a violent death on the Macintosh II. Apple has recently released MacWrite 4.6 and MacPaint 2.0, and both of these revisions run perfectly on the Macintosh II. As of press time, Apple's upgrade policy for these programs is still undecided.

"Crashing" programs (the appearance of the much hated "bomb" message) on the Mac II is a



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particularly annoying experience. The problem is with the control panel settings. They're stored in a special section of memory called "parameter RAM," which is continuously maintained by the Mac II's internal battery. When the bomb message appears, it's a 50/50 bet that the settings in the parameter RAM have been damaged by the bomb.

Unfortunately, one of the settings stored in the control panel is the "startup device," which determines where the computer looks for the system/finder files when first started. If the parameter RAM has been blitzed through a program crash, the Mac II will "forget" that an internal hard disk is installed and will refuse to boot from anything other than a floppy disk.

Once up and running from a floppy, the Mac II still won't recognize its internal hard drive. The parameter RAM memory must be rebuilt. To rebuild the parameter RAM, the user holds down the command, option and shift keys while opening the control panel. At this point, all settings stored on the control panel must be re-set (volume, mouse-tracking speed, etc.). With luck, when the Mac II is restarted, it will be able to "find" its internal hard drive. Sometimes this parameter RAM must be rebuilt a couple of times to mount the internal hard-drive.

This matter of the Macintosh II "forgetting" about its internal hard drive after a system crash

is serious business. It's a little unsettling to have the hard disk icon vanish from the finder. Thanks to this glitch, third-party manufacturers offering internal hard drives for the Mac II have found their tech support phones ringing off the hook.

Believe it or not, connecting external hard disk drives to the Macintosh II presents another problem. If an external SCSI device is connected to the Mac II, it must be turned on for the computer to function. Very early versions of the Macintosh Plus had this problem, which Apple quickly corrected with a change to the ROM chips. With the Macintosh II, this bug is back. If external devices are connected (tape back-up, CD-ROM, hard-disk, etc.), they all must be powered up and running for the Mac II to operate.

Considering the problems associated with the Mac II's SCSI bus, it's reasonable to assume that a ROM upgrade is in the offing, as well as future generations of the system and finder to patch various software incompatibilities. In these formative stages of the Macintosh II's production, it's also reasonable to assume there will be detail changes to other chips on the motherboard.

For example, many have wondered why the flagship Macintosh II ended up with a stripped-down four-voice stereo sound chip, when the Apple IIGS was fitted with a much more powerful 16-voice chip. This question is answered with a

look at the motherboard: the sound chip on the Mac II is socketed for easy replacement. Also, the existing four voice chip is "undocumented." Apple isn't supplying the chip's specs to software developers, and isn't encouraging developers to write applications using the existing chip.

## ABOUT COLOR

The promise of color is the most interesting and potentially powerful feature of the Macintosh II. Apple has created several "gee whiz" color demonstrations for the Mac II, which are, in a word, stunning. Though Apple's ImageWriter II offers color printing (with the use of an optional four-color ribbon), there are few software packages which make use of a color monitor.

One package that does support Macintosh II color is Quark's XPress page-layout program. XPress can create full-color layouts: color borders, frames, "spot color" background shading and even text can be specified in color. Once a color layout has been created, XPress can generate color separations for commercial print shops.

The "clipboard" of the new system/finder combination does support color. The color graphic demonstrations created by Apple could be copied and pasted directly into XPress for color printing.

The potential for color applications on the Macintosh II is mind-boggling. Quark's XPress has proven the potential for the Mac II to manipulate complex color images. But the real potential for color applications hinges on high-resolution color output. Currently, the Macintosh rumor mill is fueled by hints of a color LaserWriter. One can only hope.

## THE MACINTOSH II TODAY

Most of the above comments describe minor irritations—teething problems that can be expected with a computer as radically new and different as the Macintosh II. The problems of system crashes, the quirk in the SCSI bus, and the Mac II's habit of forgetting its internal hard drive may all be cured by the time this article reaches print.

The fact is, the Macintosh II is a joy to use. In its bare-bones stock form, the Mac II offers performance known only to those few who invested in Levco's Prodigy 4 upgrade. The Macintosh II affords lightning-fast recalculation of huge spreadsheets, instantaneous search and replace for word processors, and real time editing for complex graphics programs.

After spending a week on a Macintosh II, I found myself in a situation where I had to do some work on a Macintosh Plus. My immediate reaction was that something was "wrong" with the Plus. Not so. They say that absolute power corrupts and I have become Macintosh II corrupt. Absolutely!

Apple has tagged the Macintosh II as a "personal computer." Calling the Macintosh II a "personal computer" is like referring to a Ferrari as "transportation." Based on performance and expandability, the Macintosh II is poised to become the high-performance workstation standard of the PC world, with the Macintosh SE and the Macintosh Plus filling the business needs of individual users. Price alone will probably dictate this hierarchy. Considering retail prices, the Macintosh II we tested (counting the monitor, hard-drive, and extra memory) cost over \$11,000.

As of today, the Macintosh II is a hot-rod version of the other Macintosh computers. Except for color, the lesser Macintosh computers can be upgraded to perform as well as the Mac II. Timing is the element in question: we're talking about right now, today.

Tomorrow, next month and next year, as the software and hardware evolves, the Macintosh II may well re-define the words "personal computer."

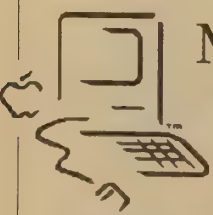
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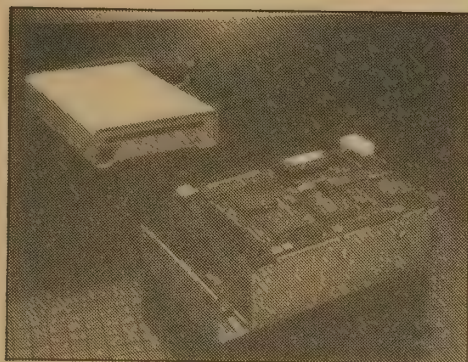
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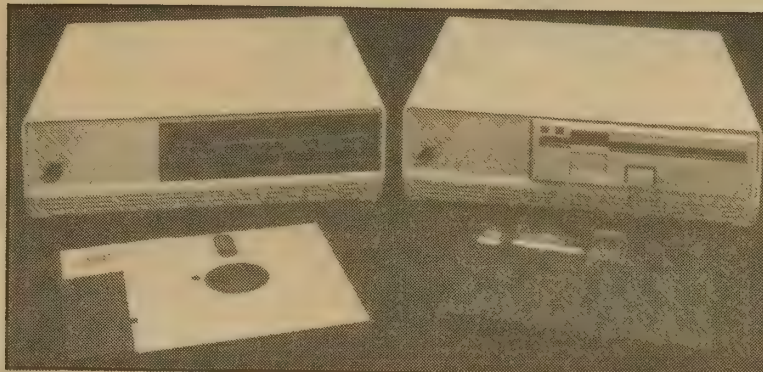
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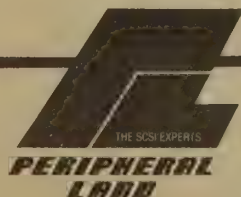
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# PowerPoint: Presentations Enter A New Era

By Frank Catalano

If you have to make presentations and you own a Macintosh, my recommendation is clear: buy PowerPoint.

My first encounter with PowerPoint was the day before a desktop publishing seminar I was giving for The Ad Club. I had given such seminars before, and I had all my materials ready for a multi-media presentation. I thought, however, that I should take a look at PowerPoint in case any questions came up about the new product. During those first 24 hours with PowerPoint, I found an excellent tool to prepare and revise my presentations.

PowerPoint resembles MacDraw, so it is likely that Mac users will be intuitively familiar with it. On the left hand side is the set of tools used to create presentations. Arranged in a column is the arrow (for selecting text), various graphic tools, and tools to indicate text entry and selection. With the exception of the text tools, the tools palette is manipulated with a minimum of effort.

PowerPoint breaks down the presentation into three parts: slides, notes pages, and audience handouts. Slides are the words, diagrams, or pictures created with the tools provided in PowerPoint. Slides can also be imported from such applications as Excel or MacPaint. The arrangement of these slides is the key ingredient to the desktop presentation.

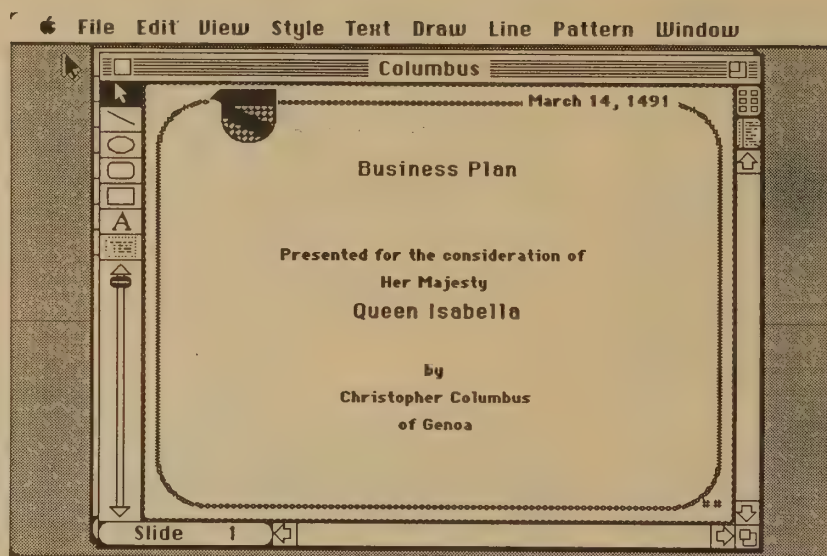
PowerPoint starts you off with a blank slide. You use the tools to create shapes, fill shapes in with patterns, and add text or import graphics from almost any other program. If you like, you can designate a slide as the "master"—this way the prepared content appears on all subsequent slides within that presentation. As you are creating the slides you will designate a descriptive title for each.

Importing text and graphics is much more valuable than you might at first realize. As you would expect, PowerPoint could paste anything from the clipboard. A more useful feature, however, is found using the "paste from" command in the file menu. This command lets you paste slides from other paint or PICT files.

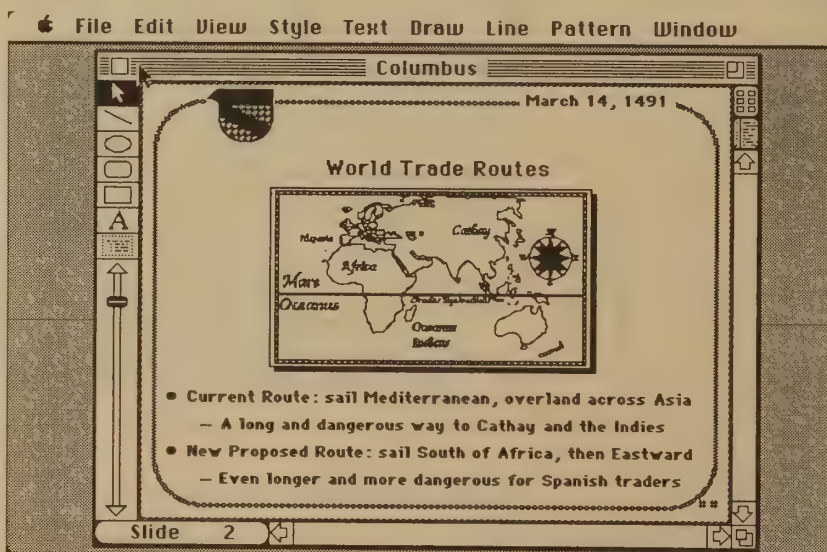
Another useful feature supplied by PowerPoint is the ability to paste in outlines prepared in More and ThinkTank. With this feature you can use existing outlines to create the complete presentation. Since all my presentation material was in More I found this extremely useful.

Once you've created the slides, you begin to reap the benefits of a PowerPoint. Now you may sort those slides, create notes pages, prepare audience handouts, or transfer the slides between presentations.

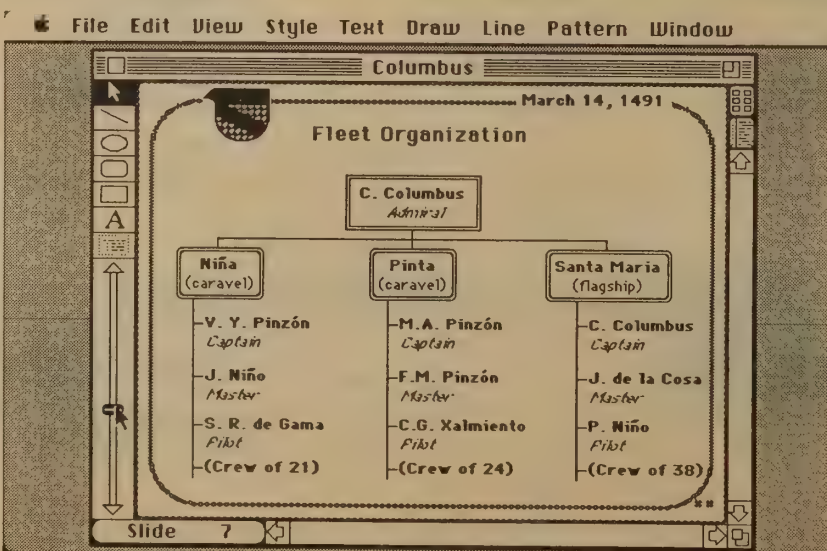
PowerPoint makes the organization of the slides in your presentation very easy. You are offered two additional options for viewing your slides. The slide sorter allows up to nine slides of your



PowerPoint lets you create effective slide presentations on the Macintosh.



It allows you to import graphics, outlines, charts, etc. from other applications to enhance the appearance of your presentations.





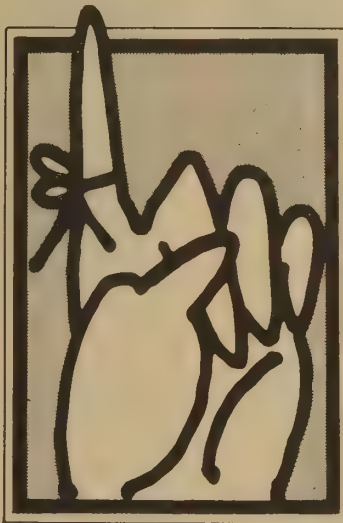
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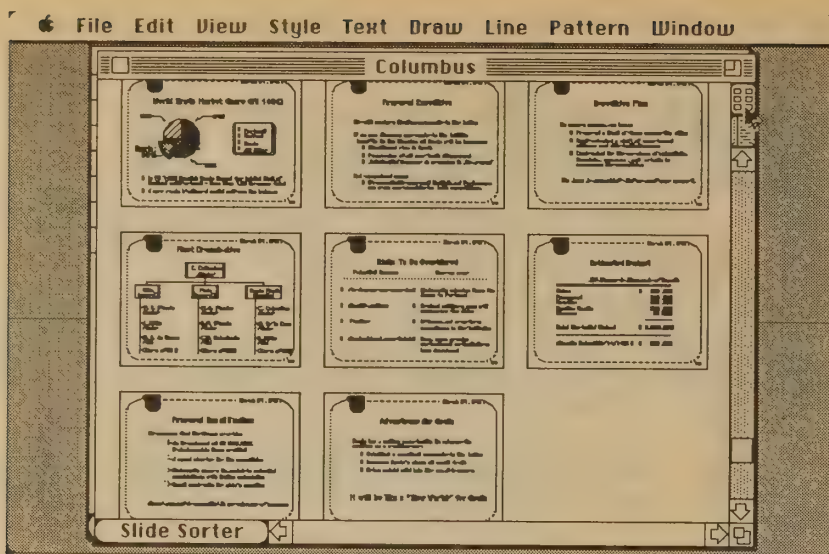
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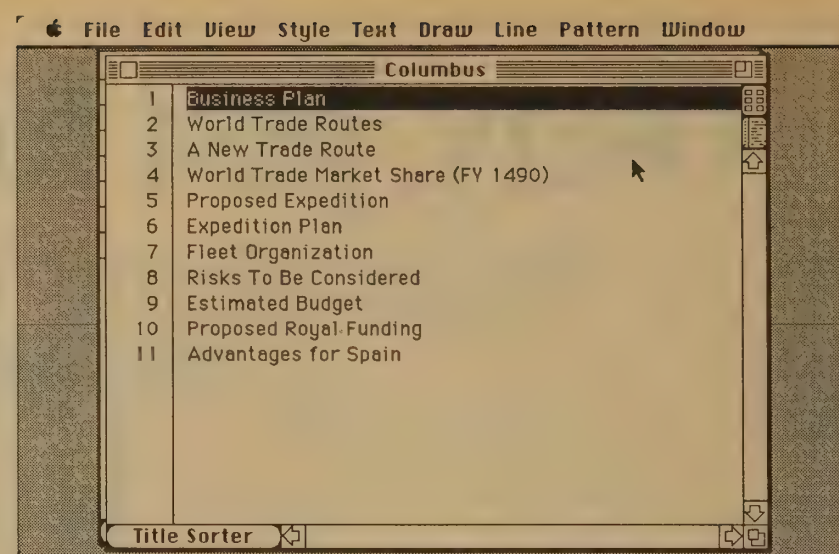
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The Slide Sorter option lets you easily rearrange the sequence in which the screens appear; it can also be used to generate compact audience handouts to reinforce your presentation.



The Title Sorter allows for easy arrangement of the points you want to make in the most effective manner.

presentation to be viewed on the screen. You can select a slide by clicking it, then reposition it by dragging it to a new location.

Since the screen will only display nine slides you will probably have to employ the other slide viewing option, the title sorter, in constructing many of your presentations. The title sorter is easy to manipulate. Click on the slide title and drag it to the desired position. (This is the way Macintosh programs should operate!) You employ these options by using the sorter buttons on the right side of the slide screen.

PowerPoint also prepares other materials which you are likely to use in your presentation. Notes pages contain an image of a corresponding slide and an area where you can write and edit notes.

You can also crop or resize the slide image. You cannot, however, edit the slide itself. PowerPoint provides a notes master page that allows you to format the position, size and shape of the image. You have the option of setting the format of an individual notes page by selecting "omit master."

Producing audience handouts with PowerPoint is also very easy. Just indicate the number of slides per page (two, three or six) and adjust the headers and footers so that they do not obstruct the slide images. You then simply print out the sheets containing reduced images of the slides.

I have only one minor complaint about PowerPoint. To choose font styles for text, you must go through an additional dialog box to "add" the typeface to the menu. As it is unlikely that you

would use more than two or three typeface styles in your presentation (unless the presentation was on desktop publishing) this seems unnecessary.

The most important part of any program is the manual, although this is one program in which you may never need it. This manual is one of the best I've seen. The index lists all the proper categories, the explanations are clear and it is even a hardback.

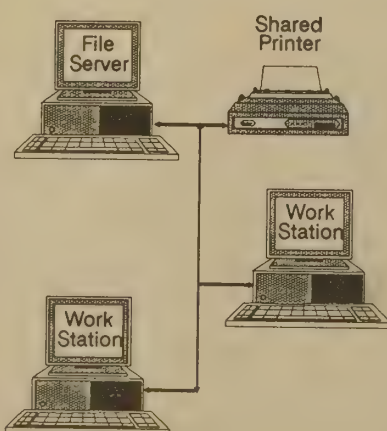
It is not often that one can feel so great about a program. PowerPoint deserves an A for competence and an A+ for effort. I know that I'm sounding like a salesperson for the product, but satisfied customers are the best salespeople. (Forethought, Inc., 250 Sobrante Way, Sunnyvale, CA 94086, 408/737-7070.) □

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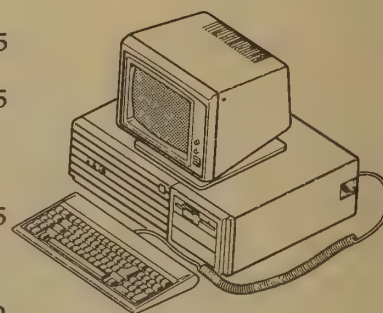
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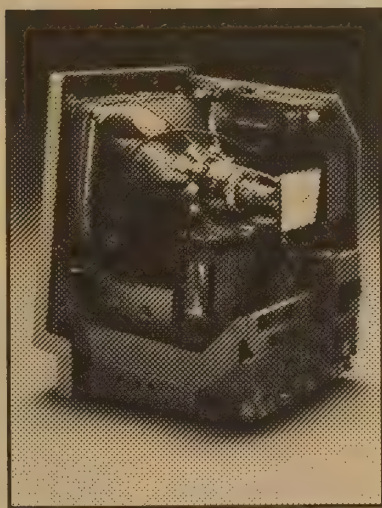


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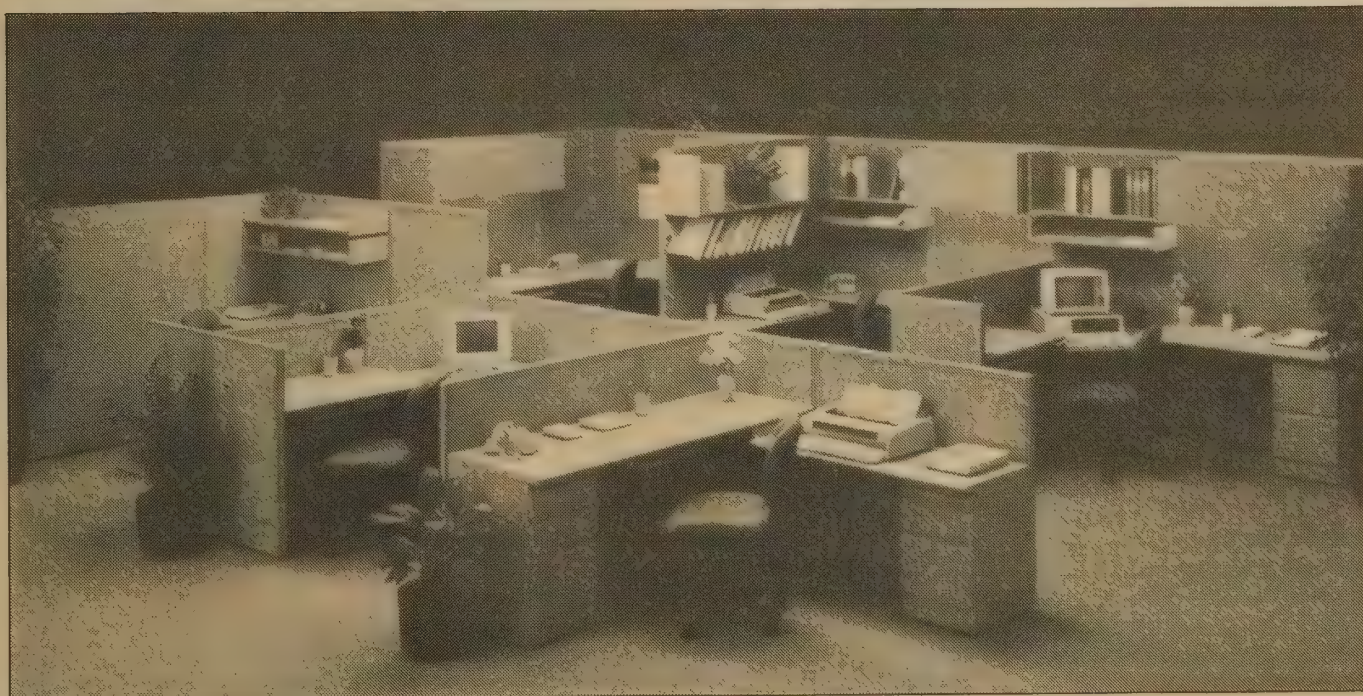


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# DataFrame XP40 + 40

## Tape Backup The Macintosh Way

By Mary Eisenhart

As anyone who's ever had to back up a 40 meg hard disk to floppies can attest, backups are a major, if necessary, nuisance. Tape backup units and their attendant software provide a significant improvement in speed, but until recently they've been unfriendly and inflexible by the standards Mac users have come to expect; if you'd only changed one file, you essentially had to re-backup the whole disk, or, at best, a single partition thereof, and as for your ability to actually see what was on the tape, forget it.

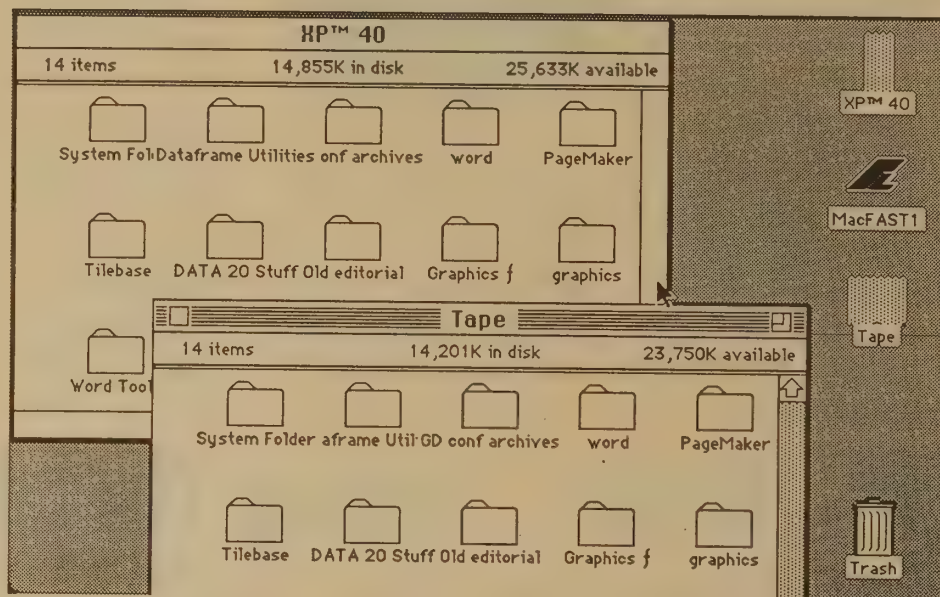
Which is why the XP 40 + 40 from SuperMac is such a godsend. It's a single-unit 40 megabyte SCSI hard disk and tape backup, and while it has many sterling features, its most spectacular accomplishment is its allowing the tape to be accessed and used exactly as if it were simply another disk drive. Changed one file? No problem — boot the tape and move the new file's icon onto it, placing the file in its appropriate folder. Or you can copy the whole folder. (You can also open files or even boot applications from the tape if necessary, but it's appreciably slower than doing the same thing from disk.)

The simple ability to copy, delete or change single files or folders allows a huge reduction in the time required to perform vital backup functions (and, human nature being what it is, greatly improves the likelihood that frequent backups will actually be performed). It also provides a powerful and flexible tool for dealing with issues of data security (say, your company's personnel records, which you'd have a hard time carrying around on floppies but don't want to leave, readable by all and sundry, on your hard disk, either) and organization (for instance, keeping your old business records archived on one tape and personal records on another, and not cluttering up your hard disk with either of them). Similarly, because the XP 40 + 40 is a SCSI device, it's possible to daisy-chain a number of drives and transfer their contents to different tapes, combine files from different drives, etc.

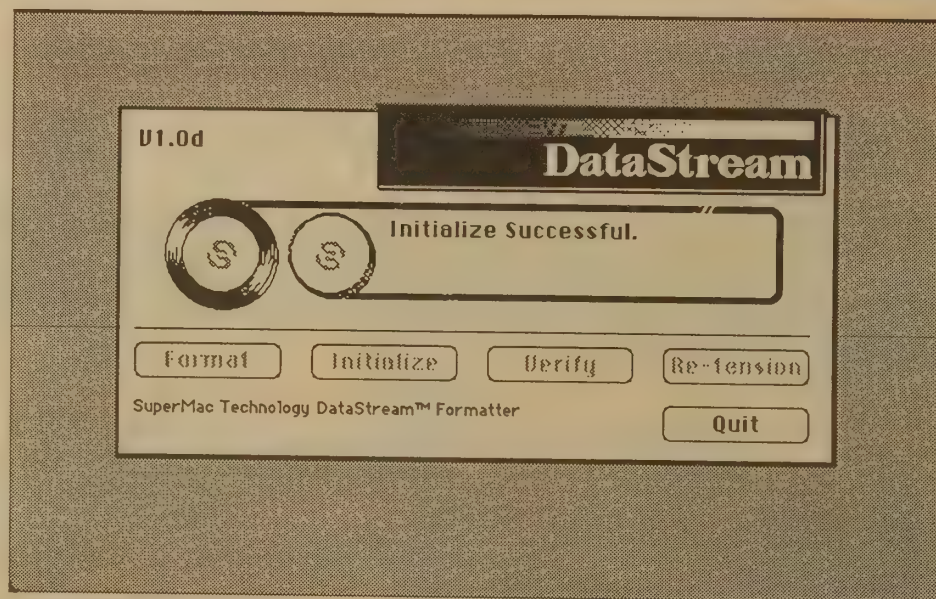
### Operation

The XP 40 + 40 arrives ready to use, with useful SuperMac software already installed, from print spoolers to disk and tape utilities (should some mishap occur, the programs and relevant documentation are also included on floppy disks, but you may never need either). Simply attach the SCSI cable to the Mac's SCSI port, plug the drive in, turn it and the Mac on, and there you are. Moving applications to the hard disk from floppies or another hard disk is a simple matter of moving icons.

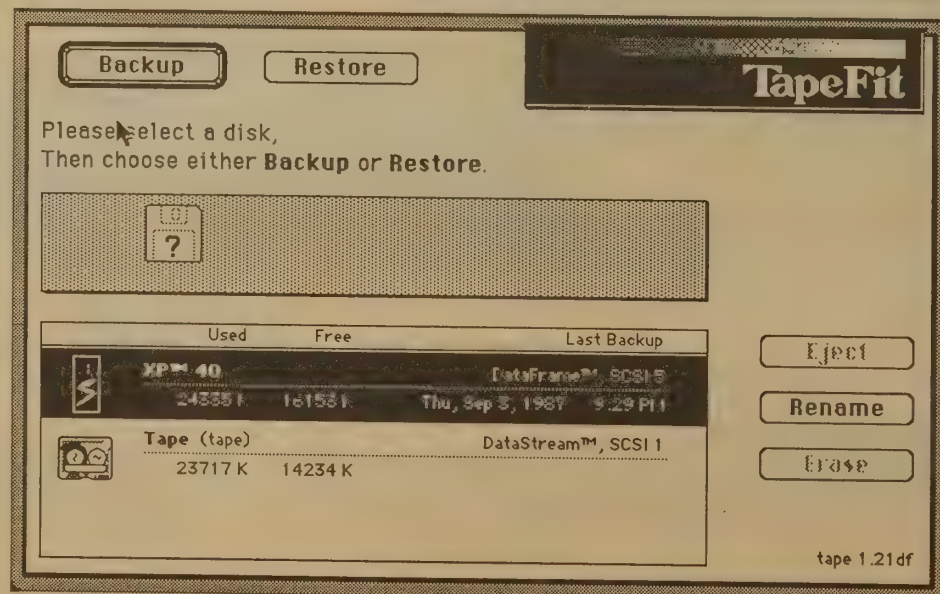
Instead of standard cassette tape, the XP 40 + 40 uses high density mini data cartridges — solidly-built, metal-backed 2" x 3" cartridges which have been in use on larger systems for some time now. One of the tradeoffs with this unit is that these tapes are currently appallingly expensive —



The XP 40 + 40 provides easy backup to tape, and allows files to be copied from other SCSI devices daisy-chained together. Note that the XP 40's files have been compressed slightly to compensate for the tape's smaller capacity.



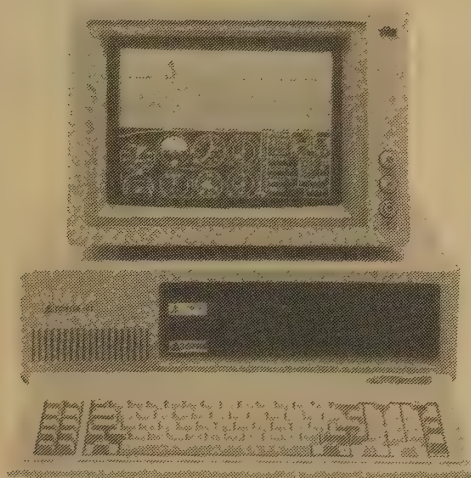
New tapes must be first formatted, which takes about 45 minutes, and then initialized. The DataStream software makes this easy and intuitive.



When you begin your backup procedure, you'll be asked to select the disk to be backed up and the destination device — in this case the 40 + 40's tape drive.



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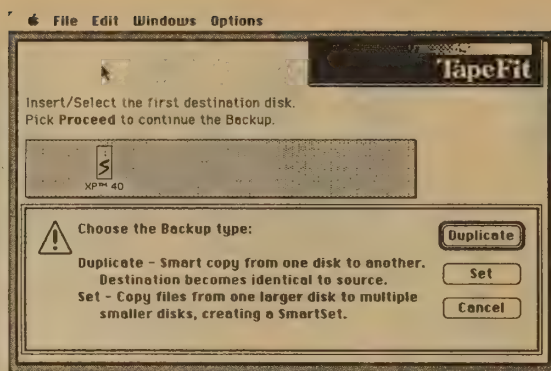
around \$60 for a 40 meg tape. However, it seems reasonable to believe that prices on these tapes will eventually fall as the advent of memory-hungry applications and massive HyperCard stacks create a wider demand for more, better and faster storage, and production increases accordingly.

The tape that came with my XP40+40 was already formatted and needed only to be initialized; extra tapes will need both operations performed (generally in the Apple/Mac world, "format" and "initialize" are used pretty interchangeably, but they are two distinct procedures here). The DataStream utility included on the hard disk makes this an intuitive and hassle-free endeavor, a simple matter of clicking appropriate buttons. DataStream will inform you as to the success of the operation; once the tape is formatted and initialized, you can perform the actual backup procedure.

Select the TapeFit icon from the Finder. Once TapeFit opens, you'll be asked to select whether you want to backup or restore, and to choose the device you want copied and the destination device.

TapeFit is exceptionally well-conceived software. It deals gracefully with the fact that the tape cartridges don't quite have a 40 meg capacity by compressing the copied files slightly, and also by giving you options as to how your backup copies can be made: a simple duplicate of the hard disk, which is the best choice if you've got less than 35 meg; a duplicate of documents only; or a duplicate of application and system files only; or a duplicate of single large files (up to 31.9 megabytes). TapeFit also supports backing up to media other than SuperMac's DataStream tape drives, including floppies, another hard disk, or Bernoulli cartridges. (It will also allow you to copy the contents of a much larger drive onto several tape cartridges.)

The first hard disk backup you perform will probably be the most time-consuming; on subse-



The TapeFit software offers several types of backup—a duplicate of the source disk, or several types of selected-file backup.

quent backups the endearingly bright TapeFit will scan disk and tape, then back up only the files that have been created or changed since the last backup. And again, the backup procedure is intuitive and non-threatening; you're prompted for anything you need to do, given clear options, and presented with a running commentary on the progress of the backup procedure. When it's finished, you'll be prompted to eject the tape (and not allowed to proceed until you do.)

It's a good idea to have the tape ejected whenever you're not using it—if the Mac contrives to get itself turned off with the tape still in, it may not be able to see the tape when it's rebooted. This is fixable, but panic-inducing.

If you've only altered one or two files during your next work session, it's usually faster to simply back them up using the Finder from the desktop, moving their icons into the appropriate folders on the tape. If you're not quite sure what you've changed, or if you've made quite a few additions,

deletions and improvements, you'll probably want to use the TapeFit procedure. In either case, this is about as painless as backups are going to get, at least till they invent the Do What I Mean key.

## Summary

My DataFrame XP 40+40 has been performing flawlessly in moderately heavy use for the past three months. It's been hauled around the Rocky Mountain states in a camera bag (kids, don't try this yourselves...and if you do, be sure to use the Park utility first...) and used in a variety of less-than ideal conditions, and it's been utterly unfazed by the experience.

Some users, especially those with a severe desk-space problem, may have a problem with the fact that the XP 40+40 is an upright device (8" high, 9½" deep, 5" wide) that sits by the Mac's side rather than under it. On the other hand, it makes a great modem stand. I'm also a little unnerved by the fact that there's no shutter or similar device protecting the tape drive from massive dust inhalation when there's no tape in the drive, but leaving the tape itself resting in the drive, but not inserted all the way, seems an adequate if inelegant solution. The currently exorbitant price (by personal computer standards, anyway) of the tapes themselves is a problem, but with luck a temporary one.

These minor caveats aside, I wholeheartedly recommend this device, which sets a new standard in efficiency and ease of use for tape backups. It's what we should have had in the first place. (SuperMac, 295 North Bernardo Ave., Mountain View, CA 94043, 415/964-8884. As this article was being prepared, SuperMac announced some design changes; this unit is being replaced by a 60 meg hard disk/40 meg tape configuration, which has a suggested retail of \$2595.) □

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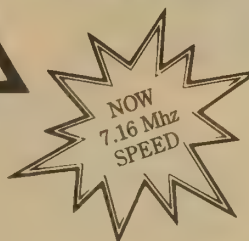
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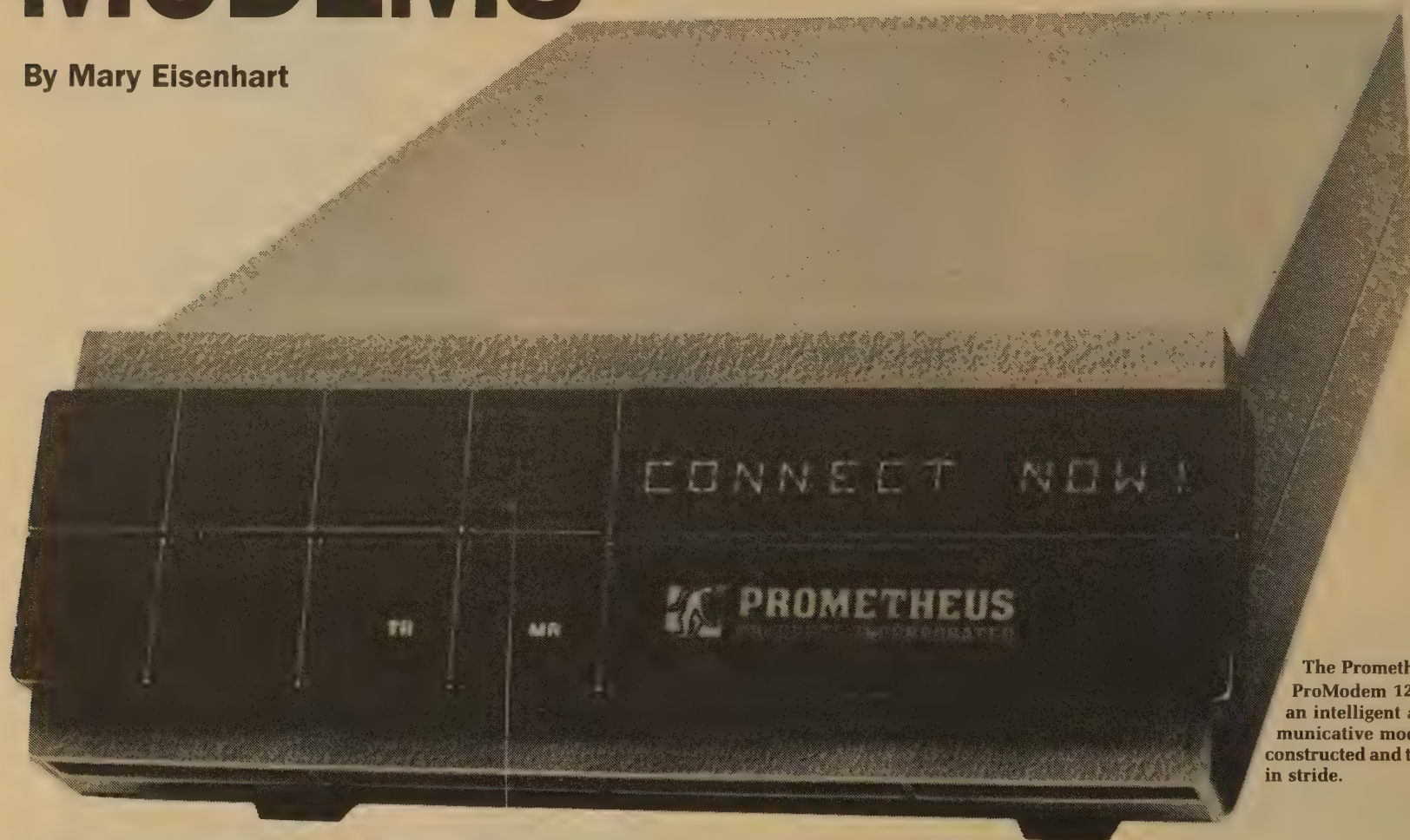
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# ALL MY MODEMS

By Mary Eisenhart



The Prometheus ProModem 1200 is an intelligent and communicative modem. It is well constructed and takes heavy use in stride.

It all started with Tom McShane.

Tom's from Prometheus Products, Inc., and if he'd been his company's actual namesake his visit would scarcely have had a more far-reaching effect.

He turned up one day as I, newly liberated from a cranky typewriter, was trying to figure out the intricacies of MacWrite (this, I hasten to add, was quite some time back). He painted a glorious picture of how a modem would transfer our hardcopy-bound operation into a paragon of modern efficiency. I already had my nose pressed against the virtual candy-store window of online conversation, so I listened gleefully to Tom's scenario.

Eventually we got a modem line installed, and, after software hassles and other neophyte-specific hair-tearing, the modem worked. And the world changed.

For the better part of two years the faithful Prometheus ProModem 1200 has been sitting on my desk, braving heavy use and the occasional infusion of Peet's French Roast, and generally rendering itself indispensable. It receives stories from our far-flung writers. It sends finished stories to the typesetters. It downloads Newsbytes from The Source. It's been used to start and maintain two conferences on the WELL. It has never malfunctioned in the least.

In the meantime, two other modems came into my life, each of which offers some advantages for particular situations. Looking at each of these

three modems offers a good initial look at what's available in the 1200 baud world. So here, for your edification, are the Prometheus ProModem 1200, the Weltec 1202 external modem, and the Migent Pocket Modem.

All these modems are Hayes compatible and support both 300 and 1200 baud transmissions. All are used on Macs, although they also work just fine with IBMs and can be purchased in IBM format (meaning that the cables and software included will be for IBM compatibles rather than the Mac). All of them come with telecommunications software; however, it's my earnest advice, to beginners at least, to spring for a package like MicroPhone or Smartcom, because when you're trying to figure out this new world, the bundled packages have a way of expressing themselves in a singularly opaque manner (really, if you're a beginner, there's no real substitute for friends who know what they're doing). Borland's MacTerm, bundled with the Migent, is somewhat noteworthy because, though limited of feature, it installs as a desk accessory, so you can dial up your online system without leaving the application you're in. However, the bundled software should probably be looked at as an incidental courtesy rather than a serious factor in choosing one modem over another.

## The Prometheus ProModem 1200

This is a serious piece of hardware. It boasts rock-

solid construction — a substantial, weighty metal case that's been designed for easy access to the modem's innards should you need to install its optional communications buffer card.

This card, expandable to 512K, allows the ProModem to receive files or perform automated functions even if your computer's being used for something else or turned off. The buffer can also be set to require a password from anyone trying to dial into your computer, and can act as a printer spooler.

If you don't need this card, you'll probably never have occasion to open up the ProModem; all its commonly-used controls and switches are conveniently located on the outside where you can get at them easily. The DIP switches, on the modem's underside, are easy to change but are probably just fine as they come from the factory.

All in all, the ProModem is a remarkably intelligent and communicative modem. It automatically senses whether it should dial pulse or tone. It supports auto-answer and autodial functions, and automatically redials busy numbers at frequent intervals. Indicator lights at the front keep you informed about your call's status, from baud rate to connection or lack thereof (Prometheus also offers an alphanumeric display option that tells you if the buffer's received any files lately and monitors your call progress in English).

If, like me, you're one of those who like as much feedback as possible while you're waiting for your call to go through (or not, as the case may be) and



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| Toshiba P321SL/P341SL (both w/tractor feeds) | \$499/\$659 |
| Toshiba P341/P351 model 2                    | \$579/\$845 |
| NEC P6 Parallel                              | \$439       |
| Panasonic KX-P1080i                          | \$189       |
| IBM Quietwriter III                          | \$1,375     |

## SOFTWARE

|                                                |             |
|------------------------------------------------|-------------|
| Xerox Ventura Version 1.1                      | \$495       |
| IMSI Desktop Publisher's Graphics (Halo DPE)   | \$89        |
| (add graphics & images to Ventura & Pagemaker) |             |
| DBXL (best alternative to dBASE III Plus)      | \$129       |
| Microsoft Word                                 | \$209       |
| Gem Collection/Gem Graph                       | \$109/\$129 |
| Disk Optimizer (New Version)                   | \$34        |
| Word Perfect 4.2/WP Library                    | \$199/\$59  |

## LASER PRINTERS/PLOTTERS/ DIGITIZING TABLETS

|                                                       |         |
|-------------------------------------------------------|---------|
| Toshiba Page Laser 12                                 | \$3,345 |
| HP Laser Jet Series II                                | \$1,795 |
| 1-megabyte RAM expansion board for HP Laser Jet II    | \$335   |
| 2-megabyte RAM expansion board for HP Laser Jet II    | \$665   |
| 4-megabyte RAM expansion board for HP Laser Jet II    | \$1,335 |
| HP 7440A color plotter                                | \$1,245 |
| HP Scanjet w/interface                                | \$1,595 |
| NEC Silentwriter LC850                                | \$1,575 |
| NEC Silentwriter LC860+                               | \$2,155 |
| NEC Silentwriter LC890 w/PostScript                   | \$3,685 |
| Dataproducts LZR-1230                                 | \$2,695 |
| AST Turbolaser/EL                                     | \$1,695 |
| AST Turboscan high-speed image scanner                | \$1,765 |
| Enter Computer SP-600 A & B, 6-pen, 14 IPS, HP-GL     | \$995   |
| Enter Computer SP-1000 A-D, 24 IPS, HP-GL, single pen | \$3,995 |
| Enter Computer SP-1200 A-E size, single-pen DM/PL IV  | \$4,495 |
| Calcomp 9100 Series digitizing tablets                | \$CALL  |
| Lasermaster CAD products                              | \$CALL  |
| Scriptel SPC/RDT digitizers                           | \$CALL  |
| Artist 1                                              | \$1,355 |

## EXPANSION/INTERFACE BOARDS

|                                                       |         |
|-------------------------------------------------------|---------|
| 128K RAM card for IBM                                 | \$ 99   |
| Clock/calendar adapter                                | \$59    |
| IBM serial card                                       | \$39    |
| 640K RAM card w/o memory                              | \$49    |
| Parallel/serial/game/clock adapter for PC/XT/AT       | \$79    |
| AST Advantage/2-8000 (8MB expansion for IBM System 2) | \$2,445 |
| AST Advantage/2-512 (expandable to 8MB for System 2)  | \$315   |

## HARD DISKS/FLOPPIES/TAPE BACK-UPS

|                                                |                   |
|------------------------------------------------|-------------------|
| Seagate 20MB kit/30MB kit (w/controller)       | \$285/\$299       |
| Seagate ST4038/ST4051/ST251 (all for AT)       | \$539/\$579/\$439 |
| Miniscribe 3650 40MB half-height for PC/XT     | \$489             |
| Miniscribe 6053 28ms 40MB hard drive for AT    | \$689             |
| Miniscribe 6058 28ms 71MB hard drive for AT    | \$965             |
| Scribecard 80SC-XT20 (21.4MB for XT)           | \$435             |
| Scribecard 80SC-XT30 (32.7MB for XT)           | \$455             |
| Scribecard 80SC-AT30 (32.7MB for AT)           | \$505             |
| National 10-megabyte external                  | \$399             |
| Okidata 1/3 height 360K floppy                 | \$59              |
| Compaq half-height 360K floppy (original)      | \$69              |
| Toshiba 3 1/2" 720K internal floppy kit        | \$135             |
| 5 1/4" 360K external drive for Toshiba laptops | \$265             |
| 3 1/2" 720K external floppy drive              | \$295             |
| Toshiba half-height 360K floppy for PC/XT/AT   | \$79              |
| Toshiba 1.2MB floppy for AT or compatibles     | \$99              |
| Alloy 40MB internal tape back-up               | \$395             |
| Alloy 40MB external tape back-up               | \$445             |
| Sysgen 60MB internal tape back-up              | \$495             |
| Sysgen 60MB external tape back-up              | \$695             |

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\*Lease per month for 36 months to qualified businesses.

## MONITORS

|                                              |         |
|----------------------------------------------|---------|
| AST Turbovision (1024x1280 resolution)       | \$1,475 |
| IBM 8513 color monitor for PS/2              | \$595   |
| IBM 8503 monochrome monitor for PS/2         | \$239   |
| Goldstar high-res EGA monitor                | \$359   |
| Samsung high-res EGA monitor                 | \$359   |
| Samsung TTL amber monochrome                 | \$79    |
| Samsung TTL amber monochrome w/tilt & swivel | \$89    |
| Amdek 410A TTL monochrome                    | \$169   |
| NEC JC1401 Multisync                         | \$549   |
| NEC Multisync Plus (15"/14"V, 21.8-45KHz)    | \$1,119 |
| NEC Multisync XL (20"/19"V, 21.8-50KHz)      | \$2,559 |
| Sony Multiscan                               | \$595   |

## VIDEO/EGA ADAPTERS

|                                               |       |
|-----------------------------------------------|-------|
| Genoa Super EGA hi-res 800X600                | \$265 |
| AST 3G-Plus 256K EGA adapter                  | \$145 |
| Monographics/printer adapter (works to 12MHz) | \$79  |
| Video 7 Vega DeLuxe                           | \$289 |
| STB Chauffeur HT                              | \$229 |
| Generic color graphics/printer adapter        | \$69  |

## SUPER SPECIAL

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|-----------------|-------------|
| 8087-2/8087-3   | \$155/\$129 |
| 80287-6/80287-8 | \$179/\$245 |
| 80287-10        | \$329       |
| 80387-16        | \$565       |
| 8086-2          | \$5         |

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want as much information as possible for immediate troubleshooting, you'll like the fact that the Prometheus has a built-in speaker with adjustable volume control, so you can hear the dialtone, busy signal, connect screech, etc., all at deafening volume if you like. (If peace and quiet is more what you had in mind, the volume can be turned down using the knob on the back of the modem.) The ProModem will also send messages to your screen about what's going on (Ringing, Busy, No Carrier, Redialing In 30 Seconds, etc.).

The modem also offers other convenient features, such as two phone jacks so you can plug in your phone and switch easily between voice and data modes. It includes an on-off switch on the back (and, while this smacks of the kick-the-television school of electronic troubleshooting, it's quite remarkable how effective it is to turn the modem on and off when some mysterious problem crops up).

Most of all, though, this modem works. It's a good choice for beginners because it's so reliable and communicative, and a good choice for advanced users because of its powerful features and options. The flawless performance of our office unit seems entirely typical — none of the Prometheus owners I've known has had a complaint, ever.

The only drawbacks to this modem are its price (\$349 list, not unreasonable in light of its features, but too much for many would-be telecommunicators) and, to a lesser degree, its bulk (11.5" x 6.5" x 2.3" — your briefcase won't hold much else if you've got the ProModem in it). These difficulties, however, are admirably addressed by the Weltec and the Migent respectively. (Prometheus Products, Inc., 4545 Cushing Parkway, Fremont, CA 94538, 415/490-2370.)

### The Weltec 1202

Computer stores and swap meets are full of a bewildering array of Hayes compatible, low-cost 300/1200 baud modems. A few of them are turkeys; most are good, functional equipment. If your budget indicates that the \$100 — \$150 price range is about right, you'll probably find yourself in this part of the marketplace.

The Weltec 1202 is a good, low-cost modem that performs admirably; while it lacks a few of the Prometheus's niceties, it also shaves about \$200 off its price. It travels better, being about half the height of the Prometheus, and has a sturdy plastic case with very Prometheus-like indicator lights at the front. It also weighs far less.

We've put it to use performing all the Prometheus's tasks, from sending and receiving files to hours of WELL-hopping, and it has performed reliably and without trouble. Like the Prometheus, it's quite communicative and makes it easy to monitor your call's progress.

So what are you giving up in return for that \$200? Mostly niceties you can probably get along without — the most serious deficiency I encountered is that, unlike the smart Prometheus, the Weltec won't automatically redial busy numbers by itself, though it can be directed to do so from software. There's no on-off switch, and instead of a permanently attached power cord the Weltec has a jack for its included power supply; as long as it's plugged into the modem and the wall, the modem is on.

The Weltec also has a built-in speaker, so you can hear your call's progress; to adjust the volume (mine seemed to have been preset on Stun) it's necessary to disassemble the modem case and adjust the volume control potentiometer.

If you need to switch between voice and data modes frequently on the same phone line, you

may find it inconvenient that the Weltec has only one phone jack; otherwise, the single jack should be no problem.

Except for the easily-remediable lack of auto-redial, most of these factors are cosmetic or, at worst, minor inconveniences, and don't interfere with the modem's performance, which is excellent. If you're a Mac user on a limited budget, the Weltec offers the functions and reliability you need at a bargain price. (For information on the Weltec modem, call Hellman's, 415/453-7924. The Weltec sells for \$139.)

### The Migent Pocket Modem

Even though I shamelessly did that very thing to my own assistant, I would not normally recommend this modem to a beginner, because it's one of the least communicative pieces of equipment I've encountered. It's got no lights, it's got no sound, and basically you never know how your call's going until you get a Connect or No Carrier message (and you still don't know if the line was busy, the remote system mysteriously died, or what went wrong). The documentation explains how to make it a bit more communicative by changing some settings from software; however, I've had no luck doing this, and anyway I'm used to its taciturn little personality by this time.

However, once you are connected, this modem transfers files with the best of them, and it offers some features the others can't match. Even besides its fetching red color, which is reputed to precisely match the paint on Wayne Ratliff's Porsche.

The Pocket Modem, you see, is about the size of a pack of extra-long cigarettes, and while its ads show it being slipped into the jacket of a nattily-dressed executive, it fits equally well in the hip pocket of your 501s. After two weeks of hauling Mac and Pocket Modem around the countryside, all I can say is that I hope Apple achieves similar feats with miniaturization Real Soon Now.

The Pocket Modem comes with a detachable 9-volt power supply; however, its real value to the traveling modemer comes from its ability to run off a 9-volt battery. There may have been some problems with excessive battery consumption on early models — I've heard various allegations that the Pocket Modem is a real battery hog, but in my own experience the 10 hours of battery life promised in the documentation is conservative. I usually get around 12 hours of use from each battery; however, a surefire way to kill a battery before its time is to leave your computer running with the modem attached. Besides lights and sound, the Pocket Modem lacks an on-off switch.

The Migent includes a non-volatile memory chip for storing a phone number and the configuration settings you choose from your software. Unless you disable this function, it will also send a warning bell to your computer when the battery starts getting low — early enough and persistently enough that you usually have plenty of time to finish your work, log out and change the battery without mishap. (Even if the battery dies, the information stored in the non-volatile memory is not lost.)

While its advantages on the road are unparalleled, the Migent also makes a perfectly acceptable everyday desktop modem if you need to use it that way. Its lack of feedback is a little daunting for troubleshooting purposes, but its operation is smooth and reliable once it's connected. It's also remarkably tough — mine continues to be trouble-free after two regrettable four-foot falls onto a quarry-tile floor, a practice I don't recommend to other users. (The list price on the Migent Pocket Modem is \$259; actual price varies considerably. For information, contact Migent, Inc., P.O. Box 6062, Incline Village, NV 89450-6062, 702/832-3700.) ☐



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# MACINTOSH BUYER'S GUIDE

## VideoWorks II

Animated Presentations for the Office, School or Home

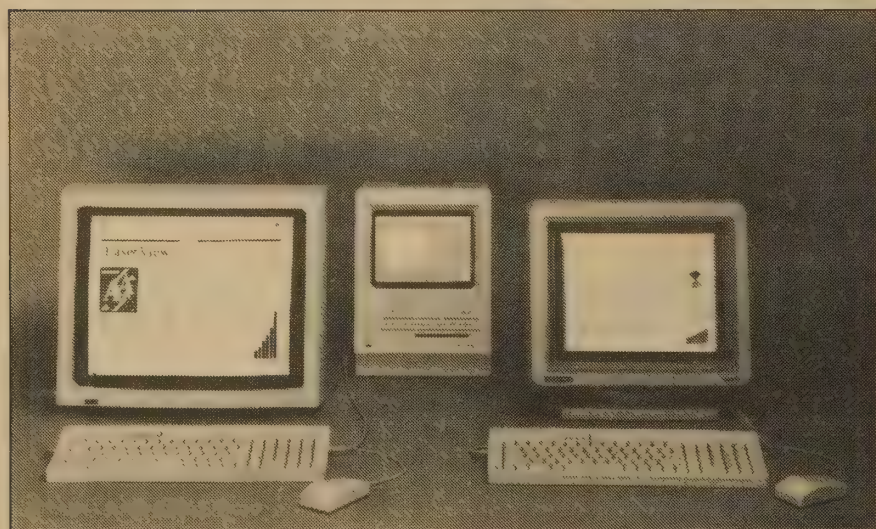


### VideoWorks II From MacroMind Creates Animated Presentations.

*VideoWorks II* from MacroMind allows users to create animated presentations for the office, school or home. *VideoWorks* includes a slide show creator which can include animation or sound along with *MacPaint* or *MacDraw* documents. It also has color capability with the Macintosh II. It includes its own paint program, an art grabber that allows you to import and use *MacPaint* artwork without leaving *VideoWorks* and a graphic notational score that allows the user to edit 24 pieces of artwork on the screen at one time. The program also comes with a wide variety of clip art, movies and sounds. (\$195) Distributed by Brøderbund Software, 17 Paul Drive, San Rafael, CA 94903-2101 (415) 492-3200.

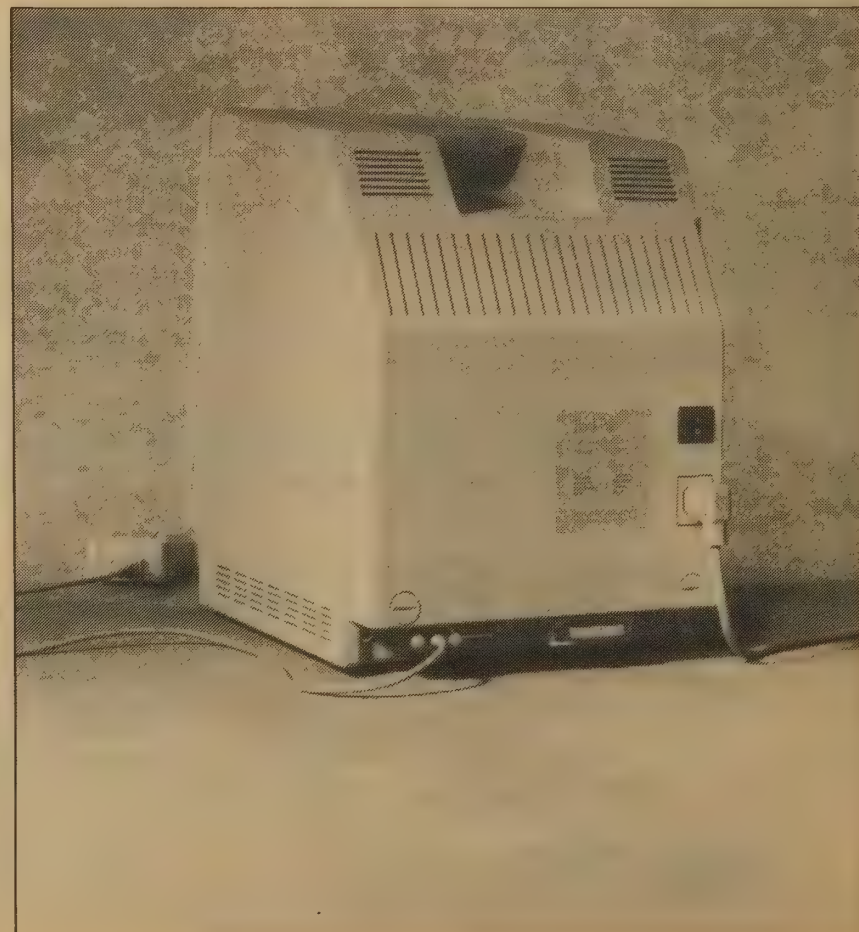
### Strap A Hard Disk On The Back Of Your Mac Plus

The BacPac 40 from Jasmine Technologies is a 40 MB hard drive that mounts on the back of the Macintosh Plus and becomes an integral part of the computer system. As it is attached to the back of the Mac it is easily portable and eliminates dangling cords and cables. The drive fully utilizes the Macintosh Plus' SCSI interface. (\$1,299) Jasmine Technologies 555 De Haro Street, San Francisco CA 94107. (415) 631-4339.



### Sigma Designs Gives The SE Two Large Screen Options

The LaserView Display System From Sigma Designs comes in a 19" version for \$2,295 and a 15" version for \$1,795. The LaserView display adapter board is mounted inside the Macintosh SE, using the single bus connector. Both monitors are landscape mounted and have paper-white phosphor screens. They have the capability to display legible facing pages in non-interlaced mode resulting in a flicker-free screen. Sigma Designs 46501 Landing Parkway, Fremont, CA 94538. (415) 770-0100.





# EM Pac

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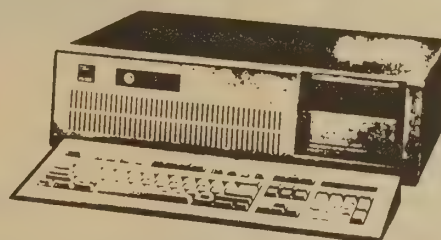
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- AT-style case
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- Enhanced AT keyboard
- FCC approved
- 100% IBM AT compatible



## NANAO 8060s Multi-scan Monitor \$550.00

- IBM Personal System/II compatible—monitor for the future
- IBM PGA, EGA, CGA compatible
- 15.5 to 35 KHz horizontal; 50 to 80 Hz vertical scan
- Super Hi-Res (820 x 620) 14-inch multi-scan color monitor
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## EXEGA™ -II MD-B04 \$395.00

- Maximum 1056 x 480 in 18 of 64 colors (H.sync 22 KHz, 40 Hz)
- Free format display by attached utility software provide choice of following columns and rows
- Printer port is standard
- Fully compatible with IBM EGA
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## Super EGA + board \$290.00

- 35.0 KHz 800 x 600
- Operates with 4.77, 6, 8, 10, 12 or 16 MHz CPUs
- EGA mode: 132 col. x 44 up to 1056 x 352 pixels
- Display 3270 format (Models 2,3,4 and 5)

## XT Turbo System \$595.00\*\*

- XT Turbo dual-speed 4.77/10 MHz motherboard
- AT jr. case w/150W power supply
- 256K RAM installed
- Two 1/2 height 360K floppy disk drives
- Floppy disk controller
- Monochrome graphic card w/printer port
- High resolution monochrome monitor
- AT-style keyboard
- FCC Class B approved

\*\* (4.77/8MHz less \$20.00)

## AT Turbo System \$950.00

- AT Turbo dual-speed 6/10MHz motherboard
- AT case w/200W power supply
- Zero wait state
- 512K RAM installed
- One 1/2 height 1.2M floppy disk drives
- Western Digital floppy/hard-disk controller
- Monochrome graphic card w/printer port
- High-resolution monochrome monitor
- AT compatible keyboard
- FCC Class B approved

### Keyboards

XT/AT Compatible (5161 or BTC5339) \$60.00  
XT/AT Compatible (BTC5060) \$45.00

### Modems

Everex Internal Modem, 300/1200 bps w/software \$95.00  
Everex Internal Modem, 2400 bps w/software \$195.00  
EasyData External Modem, 2400 bps w/software \$195.00

### Peripheral Cards

XT 2 Meg EMS RAM card (OK) \$85.00  
AT 2 Meg EMS RAM card (OK) \$95.00

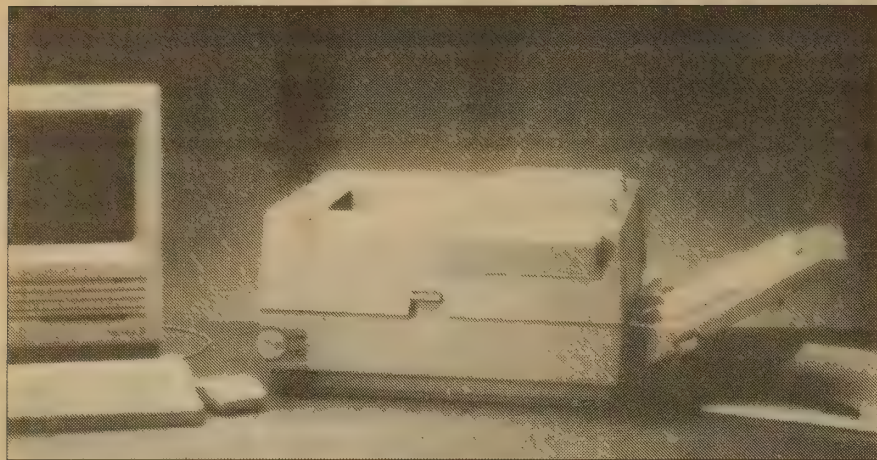
### Monitors

EmPac Monochrome (OEM Hyundai) \$75.00  
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# MACINTOSH BUYERS GUIDE

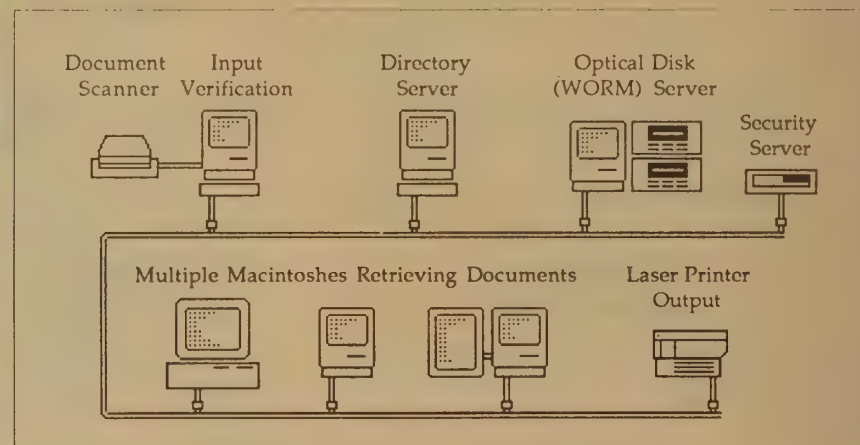
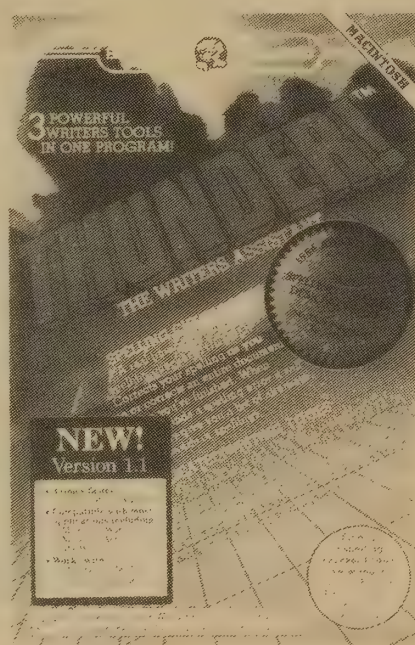


## Affordable Laser Printer From General Computer

The Personal Laser Printer (PLP) from General Computer is a full featured laser printer that performs all image processing on the Macintosh with software rather than using redundant printer hardware. The PLP offers 300 dots per inch text and graphics output along with three printing modes: preview, draft and high quality. The PLP uses fonts developed by Bitstream and is compatible with all software applications that follow Apple's printer interface guide. (\$2,599) General Computer, 215 First Street, Cambridge, MA 02142.

## Updated Thunder 1.1 Is Three Times Faster Than Before

Thunder 1.1 from Electronic Art's Batteries Included line is a collection of Macintosh desk accessories. It is three times faster than its predecessor, spell checking documents at the rate of 100 words per second. Thunder can also analyze documents and compile statistics on the number of characters and words in the document, the average number of words per sentence and the number of words longer than three syllables. Thunder also supplies an abbreviations expander. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404.

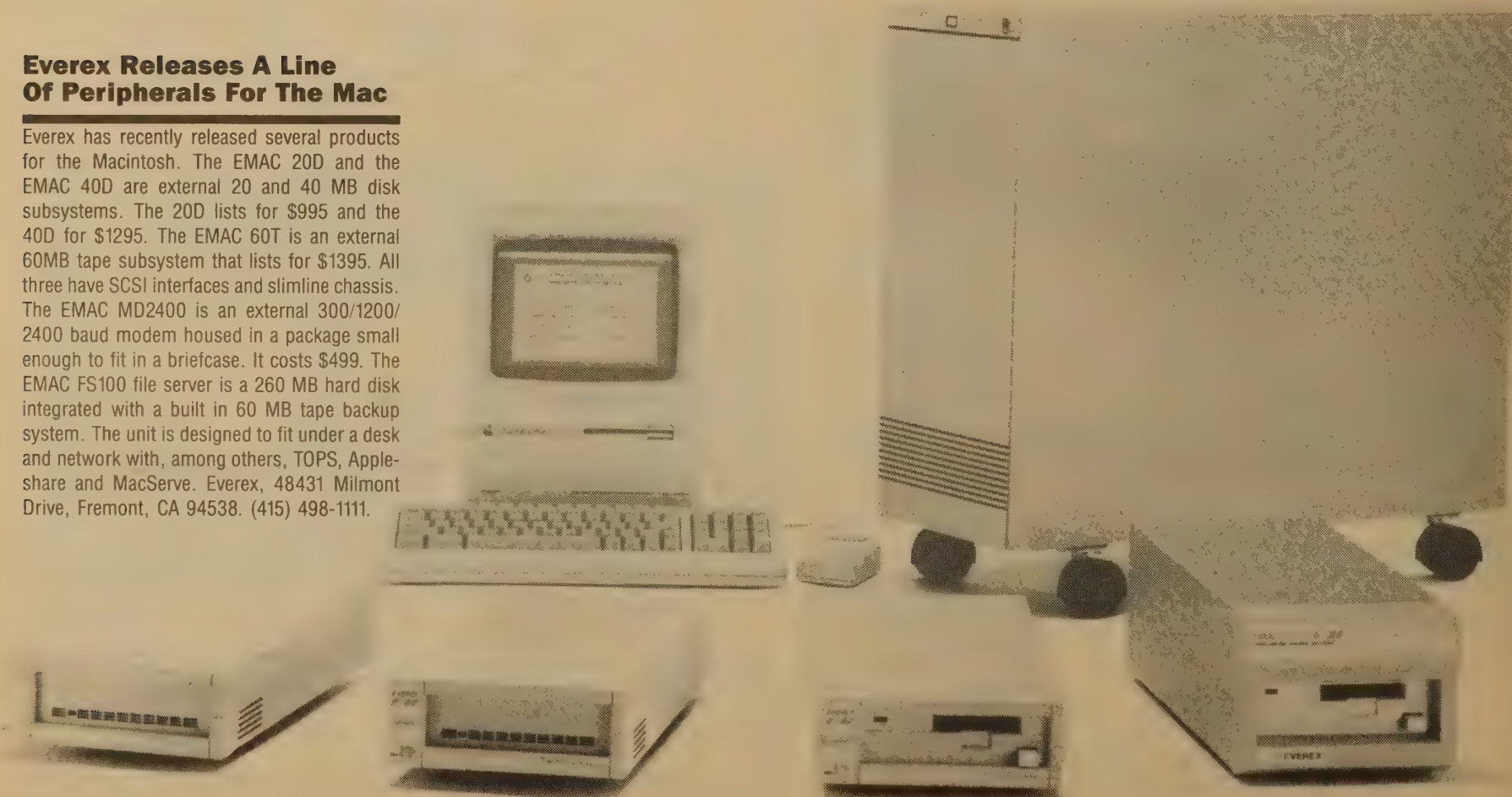


## New Features For Multi-User Archival And Retrieval System

Micro Dynamic's MARS (Multi-User Archival and Retrieval System) is an integrated electronic document management system that provides permanent, compact storage and online access to an organizations vital information. It incorporates high speed scanners, optical disk drives, local area networks, and laser printers. The system enables users to scan vast quantities of paper documents and permanently archive them on WORM optical disks. The new features for MARS include the ability to archive computer-generated documents, export digitized documents to standard Macintosh graphics programs and export indexing data to most databases. Micro Dynamics, Ltd., 8555 16th St., Ste., 802, Silver Springs MD 20910 (301) 589-6300.

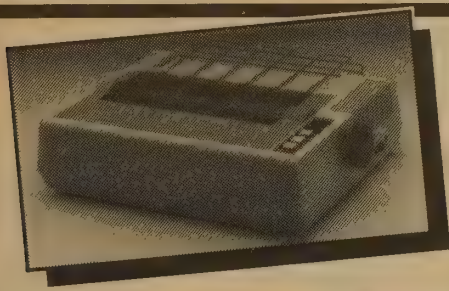
## Everex Releases A Line Of Peripherals For The Mac

Everex has recently released several products for the Macintosh. The EMAC 20D and the EMAC 40D are external 20 and 40 MB disk subsystems. The 20D lists for \$995 and the 40D for \$1295. The EMAC 60T is an external 60MB tape subsystem that lists for \$1395. All three have SCSI interfaces and slimline chassis. The EMAC MD2400 is an external 300/1200/2400 baud modem housed in a package small enough to fit in a briefcase. It costs \$499. The EMAC FS100 file server is a 260 MB hard disk integrated with a built in 60 MB tape backup system. The unit is designed to fit under a desk and network with, among others, TOPS, AppleShare and MacServe. Everex, 48431 Millmont Drive, Fremont, CA 94538. (415) 498-1111.





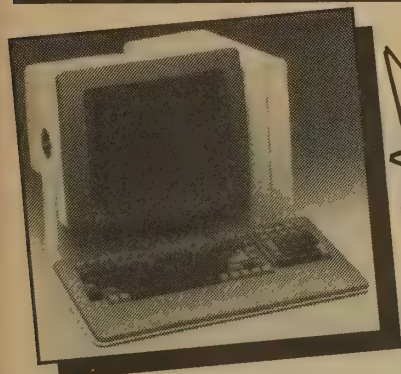
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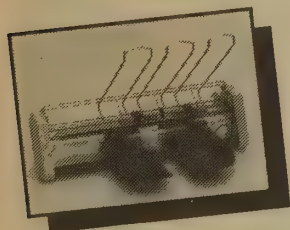
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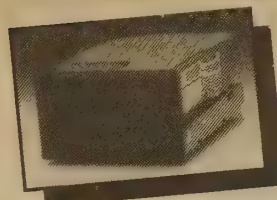


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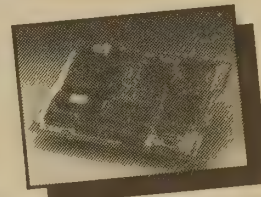
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# MACINTOSH BUYERS GUIDE



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## Keep Your Mac Up And Out Of The Way With The Macintosh Valet

The flexible rotating arm of the Macintosh Valet from Micro Computer Accessories holds the Mac, along with its mouse, disk drive and keyboard approximately six to eight inches off the desktop. A rotating base clamp attaches it to the desk. The platform rotates 90 degrees to both the left and the right and the arm extends to a 36 inch radius and conceals all cables. The Valet is constructed of steel and finished in Macintosh beige. (\$139) Micro Computer Accessories, Inc., 5405 Jandy Place, P.O. Box 66911, Los Angeles, CA 90066-0911. (213) 301-9400.



## Popular Disk Magazine Now Available With Macintosh Programs.

UPTIME is a popular "magazine on a disk" for the Apple II that provides five programs along with reviews, product announcements, news and editorials. For the first time a new monthly disk magazine will be published by UPTIME exclusively for the Macintosh. The first installment includes, among others, a mailing labels program, a kinetic art demonstration, a computer version of Yahtzee! and a calendar desk accessory. (\$14.95 per disk or \$89.95 per year.) Viking Technologies Inc., P.O. Box 299, Newport RI 02840. (800) 437-0033.



# Macsimizing Your Business

... a buyers' guide for businesses and professionals



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## "If it doesn't work it's not worth selling"

—Stacey Reineccius, President  
Julian Systems Inc.

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assistance. Our unique position as a manufacturer and software design company allows us to bring aspects of expertise and information into the design of your system that other folks have to wait months to even read about.

"If it doesn't work, it's not worth selling." We believe that, and we apply it. When was the last time you bought a product on a salesperson's recommendation without their ever having seen the product? Were you satisfied? Probably not, and very likely it cost you a great deal of money and time. At Julian we will sell no product until we have had the time to thoroughly evaluate and use it ourselves. We do not rely on the reviews or word of mouth. If we have not used it ourselves then we will NOT recommend it, period.

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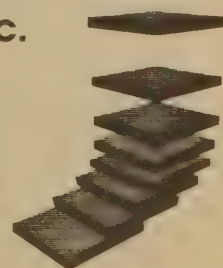
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## BUYERS GUIDE

### The ProStation Offers One Gigabyte Of Storage For The Mac II

The ProStation 1024 from Mirror Technologies is a hard disk drive that offers a modular upgrade path from 85 MB to 1024 MB. Designed for high end CAD/CAM and scientific applications, it allows the user to purchase memory needed now and at the same time offer a guaranteed upgrade path that requires no further cabinetry purchases or additional SCSI addresses. The ProStation also includes a built-in tape backup unit and back up software. It is designed to aesthetically complement the Mac II. (\$7,995) Mirror Technologies, Inc., 2209 Phelps Rd. Hugo, MN 55038. (612) 426-3276.



### Keep Track And Call Back With Market Master

Market Master is a desktop marketing and sales lead follow up package for the Macintosh. The software is designed to process sales leads and automatically follow up at regular intervals. It generates personalized form letters complete with letterhead, call schedules and scripts. It also produces labels and envelopes for mailings. Market Master automatically provides weekly reports of all activity along with a complete history of any or all contacts. (\$275) Breakthrough Productions, 10659 Caminito Cascara, San Diego, CA 92108. (619) 281-6174.



### The Vista 1600 Offers High Resolution And Large Screen For Mac II.

The Vista 1600 from Cornerstone Technology is a 19" monochrome monitor and adapter card providing a resolution of 1600x1280 pixels. It is designed to offer the display size and graphics capabilities required for the technical documentation publishing field, CAD/CAM applications and computer aided software engineering on the Mac II. It offers a non-interlaced, flicker-free display and is compatible with most Macintosh graphics, desktop publishing and business software programs. (\$2,195) Cornerstone Technology, 175A East Tasman Drive, San Jose, CA 95134-1620. (408) 433-1600.



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- Game port.
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| EVEREX 2400B Modem .....        | 189 |
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| ST251/277 hard disk. .... | 459/529 |
| ST4096 hard disk .....    | 895     |

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| JC 14" TTL .....      | 99  |
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## Anti-Terror Net

By Brock N. Meeks

**Y**ou are the security manager of a large multinational company. Your job is to coordinate the movement of key company personnel through a geopolitical mine-field of terrorism and treachery.

The presence of these key personnel around the world is vital to the stability and future profitability of the company. Yet, should any of these personnel be taken hostage or worse, the monetary ramifications could be crippling, the company's world reputation irreversibly damaged. Safety, therefore, is foremost in your mind.

How do you assess the risks involved in moving these personnel around, while assuring their safety? Certainly reading the impotent news wires of the Associated Press et al. isn't going to give you enough information.

Just then your eyes focus on a small discreet ad in *The Wall Street Journal*. You smile. Strains of the *Mission: Impossible* theme drift through your cortex; you casually look over your shoulder for Peter Graves.

The *Journal* ad is for a company with the sterile-sounding name of Ackerman & Palumbo Inc., of Miami Beach. The ad copy mentions a service that is "an analysis of terrorism and political stability risk in 75 countries, updated continually every business day and accessible electronically by personal computer. Subscription limited to end user companies." "Risknet," you say out loud. "Catchy name." You reach for the phone.

### TERRORISM VS. SAFETY

The voice on the other end of the phone is cautious. The sentences are deliberate. E.C. (Mike) Ackerman keeps erasing his words. Verbally backspacing.

"The focus (of Risknet) is on the safety of American corporate personnel. Overseas. Or multinational corporate personnel overseas.

"It's terrorism risks and stability risks. Basically the day-to-day focus is on the safety of personnel."

Mike Ackerman is a principal of Ackerman & Palumbo Inc. Risknet is a product of his 10-year-old company. You ask about his background and that of partner Louis Palumbo.

Both are former spies. More polite: former CIA agents. Ackerman says he left the CIA in 1975 (after 11 years with the agency) "to protest the sensation-seeking congressional investigation of the agency, as well as to plead for the preservation of an American intelligence capability." Palumbo, it turns out, was with the CIA for 22 years; he specialized in CIA personnel protection overseas.

Ackerman was an operations officer responsible for handling human resources, or the recruiting of locals, for the agency's use against the Soviet Union in Latin America and Africa.

Impressive credentials, you think, but you'd

hardly risk your job and the necks of corporate personnel on their reputations. Just how does Risknet get its information?

Risknet is fed information from a 25-member staff that consists of former State Department personnel, ex-CIA operatives, and retired security officers. "Basically, the staff consists of people I've known that are leaving the agency, or people leaving the agency that know our company," says Ackerman. Ackerman says Risknet also employs the services of a host of "stringers." These freelancers are often journalists covering terrorism in the field and academics who specialize in studying terrorism.

Reports on terrorist activity are fed daily into the Risknet database, which is maintained on Macintosh computers. Ackerman says that most reports are phoned in, "but we expect to have more people uploading their reports online in the near future."

Risknet's staff analyzes these reports and then makes forecasts regarding possible terrorist activity. They also track trends in the world's "hot spots," such as Beirut, and recommend a course of action should any of their clients have to travel in these areas.

Using your other phone line, you dial up a sample of Risknet's offerings. Online you see two broad categories: an executive digest and 75 country reports.

Looking over the executive digest, you see it provides an overview of the world's terrorist activities and provides a summary of possible reactions. For example, in the aftermath of the bloodshed in Mecca, Risknet notes that prime targets of the Shia terrorists would be U.S. and French diplomats. The report goes on to suggest that multinational contractors tighten up bomb-control measures.

Country reports track the stability of the host governments' and analyze the future political climate. In the Panama report, for example, Risknet reports on an opposition party rally and the government's likely response (a counter-demonstration). This counter-demonstration, Risknet suggests, carries a risk of vandalism against U.S. multinational properties "despite assurances to the contrary." The report names names and provides background on past activities of the named military and government officials.

"I could get the same information by simply monitoring the news wires," you tell Ackerman. He quickly points to the fact that his company ties several unrelated events together and puts them into perspective. He says that many terrorist activities go unreported by the American press, but Risknet, because of its in-country staff, provides this information in its reports. "We don't just report events, we analyze," he says.

To illustrate this point, Ackerman reminds you of Risknet's advisory that warned Americans to evacuate Iran. That September 1978 report was made a full five months before the overthrow of the Shah's government. "People didn't listen

and had to use extreme measures to rescue their personnel," he says.

### ONLINE ACCESS

You learn that Risknet is available on the General Electric Information Services Co. (GEISCO) packet-switched network. "We choose the GEISCO network because it's available from 26 different countries," Ackerman says. "We update the database continually as reports come in."

Ackerman declines to name specific clients. However, he does say that "we service 80 of the Fortune 100 companies and 175 of the Fortune 300."

"The company started out as a hard copy forecasting service," Ackerman says. "Then we moved to telex and FAX delivery." He notes that his company is phasing out both of these services in favor of online access. "The online access is the ultimate, obviously. It's really put the FAX and telex out of practical use. The only resistance we're getting is from people that are afraid of computers. Other than that, the acceptance of the online system has been fantastic."

Time to talk nuts and bolts. "How much do we have to pony up for this service?" you ask.

"Payment is up-front," says Ackerman. "Can pay between \$4,000 and \$6,000, depending on how much hard copy delivery your company wants." Risknet charges 75 cents a minute for U.S. access and \$1.25 for access outside of the U.S. There is also a quarterly travel report available in hard copy for \$1,250.

### SIDE SERVICES

Ackerman & Palumbo Inc., also assists in hostage recoveries and does security training for company personnel. Ackerman says the Chubb Corporation, an insurance company, has his company on retainer as a consultant in kidnapping cases. In addition, Risknet is planning a Japanese-language version of Risknet.

"We have several foreign clients, but right now they are accessing the information in English. To make the service more marketable, we're thinking of several foreign language versions, the first being Japanese," says Ackerman. "The technical difficulties (of providing a Japanese version) are surprisingly few." Ackerman gives the Macintosh credit for the smooth technical transition.

### WHO'S WHO

It sounds like Risknet has an impeccable client base; Risknet carefully screens its clients. "Our users are household names," says Ackerman. Individuals aren't given access, "and we wouldn't sell to, say, a travel agency." And then he adds: "We also don't sell to other governments. That's a big no-no."

You ask Ackerman if his former employer has expressed any interest in Risknet.

"Hopefully they have their own networks," is all he says. (Ackerman & Palumbo, Inc., 1666 Kennedy Causeway, Miami Beach, FL 33141, 305/865-0073.) □

From 1976 to 1980 Brock Meeks was a member of the United States Air Force intelligence community. He's currently a San Diego-based freelancer. Copyright ©1987 by Brock Meeks; all rights reserved.



# We Guarantee The Lowest Price!

## TURBO XT | 10 MHz 286

|                                |      |
|--------------------------------|------|
| 8/4.77 MHz Turbo Motherboard   | \$80 |
| 640K RAM                       | .75  |
| XT Type Case                   | .27  |
| 150 Watt Power Supply          | .45  |
| 360K Floppy Controller         | .24  |
| 360K Floppy Drive (Japan Made) | .69  |
| AT Type Keyboard               | .45  |
| Hi-Res Monographics/Printer    | .45  |
| Mono Amber Monitor (720x348)   | .75  |

COMPLETE SYSTEM **\$488**

|                                 |       |
|---------------------------------|-------|
| 10/6 MHz Motherboard            | \$350 |
| 512K Ram 120ns (Japan Made)     | .70   |
| AT Type Case                    | .60   |
| 220 Watt Power Supply           | .75   |
| Hard/Floppy Controller          | .135  |
| 1.2MB Floppy Drive (Japan Made) | .95   |
| AT Type Keyboard                | .50   |
| Hi-Res Monographics/Printer     | .45   |
| Mono Amber Monitor (720x348)    | .75   |

COMPLETE SYSTEM **\$949**

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With Software

**1200B**  
**\$75**

**2400B**  
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### DISK DRIVES

|                         |                   |
|-------------------------|-------------------|
| TEAC 360KB/1.2 MB       | \$85/115          |
| FUJITSU 360KB/1.2MB     | 69/95             |
| 3 1/2" 720KB            | 129               |
| APPLE COMP. Disk Drives | 11e \$90/11c \$99 |

### MOTHERBOARDS

|                           |      |
|---------------------------|------|
| XT 640K Motherboard (OK)  | \$75 |
| XT Turbo Motherboard (OK) | .80  |
| AT 6/10 MHz Motherboard   | 350  |

### ADD ON BOARDS

|                                   |        |
|-----------------------------------|--------|
| Monographics Card w/Printer Port  | \$40   |
| Color Graphic Card w/Printer Port | .40/45 |
| Paradise EGA Card                 | 150    |

|                                |     |
|--------------------------------|-----|
| EGA Comp Card                  | 140 |
| Floppy controller card         | 24  |
| Multi I/O Card                 | 55  |
| Printer Card                   | 20  |
| RS-232                         | 29  |
| Monographic and I/O+ Card      | 105 |
| Clock Card                     | 25  |
| Game Card                      | 20  |
| AT I/O Card                    | 55  |
| XT 2nd Serial Kit              | 15  |
| AT W.D. Floppy/Hard Controller | 135 |
| AT 2nd Serial Kit              | 25  |

### MONITORS

|                                              |      |
|----------------------------------------------|------|
| Amber Monitor (720x348)                      | \$69 |
| 14" DM-14 Amber Monitor (720x348)            | 125  |
| CTX Color Monitor (640x260)                  | 249  |
| EGA Monitor (720x350)                        | 349  |
| (14" Non-glare & RGB/Amber/Green Switchable) |      |

### MISC.

|                                      |          |
|--------------------------------------|----------|
| Gender Changer                       | \$5      |
| Printer Cable 6'/9'/15'              | 5/10/15  |
| 6' RS-232 (MF, F-F, M-M) Cable       | .9       |
| XT Slide-In Case                     | 27       |
| XT (AT lookalike) Case               | 40       |
| AT Slide-In Case                     | 60       |
| External Chassis                     | 80       |
| Diskette Box (cap 50 pcs)            | .4       |
| Data Switch Box                      | 20       |
| Dot Matrix Printer                   | 199      |
| Power Station (with surge)           | 29       |
| Surge Protector (UL Approved)        | 9.50     |
| 150W/180W/200W Power Supply          | 45/60/75 |
| 5160 XT (AT-Type) Keyboard           | 45       |
| 5060 (AT-XT Switchable) Keyboard     | 50       |
| Enhanced (AT-XT Switchable) Keyboard | 60       |
| Monitor or TV Swivel Base (12"/14")  | 12/15    |
| Keyboard Drawer                      | 29       |

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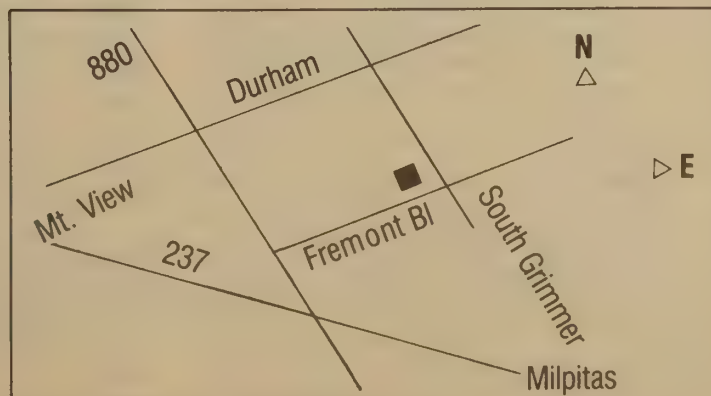
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# APPLE II

## BACK TO SCHOOL

### Top Ten Educational Software Titles For The Apple II

By Mike Markowitz

**Y**ou're a parent. You just bought a brand-new Apple II computer "for the kids." Maybe you'll try to learn how to use it yourself...

Congratulations on a wise decision.

You're a kid. You just got a new Apple II. You know you better not play games on it more than a few hours a week. So now what?

You lucky little devil.

The Apple II has a huge base of "educational" software. This helps to explain its remarkable longevity in the face of an avalanche of low-priced PC clones. Unfortunately, the people who sell you a computer can't tell you much about education, and the people who teach your kids usually can't tell you much about software.

What makes a computer program "educational" anyhow?

The lowest level of educational software is simply an electronic page turner. There is a lot of text, and not much interaction. A student with good reading skills and strong motivation can probably learn something this way, but it's not what you want for a home computer.

Next comes drill-and-practice software (the electronic flash card). The computer displays something like:

$$7 + 4 = ?$$

If you enter "11" the computer displays a message like "Very good, Mike." If you enter anything else, it beeps and shows you the right answer. Drill-and-practice is excellent for math skills, spelling, and foreign languages. This is easy software to write; very young programmers with just the rudiments of BASIC can write their own flash card programs. Commercial products add colorful graphics, sound effects, "diagnostic" feedback and other frills that help to sell the package. Schools buy lots of this stuff. You don't need to.

Games and simulations are often the most powerful and effective educational software. Look for games that have staying power — that means they can be played repeatedly without becoming stale. Look for games that have lots of options, so they can be played at different levels of difficulty, with or without a time limit, alone or in a group, etc.

The best kind of educational software falls into the category of Real Tools. Unless you are a lumberjack family, this does not mean robotic chain saws (although several rather pricey toy robotics kits are available for the Apple II). Most of us earn our living shuffling paper, and Real

Tools for computers do just that: word processors, databases and spreadsheets. Printing, drawing and "painting" programs are probably the most important Real Tools for young learners. A color printer may be expensive, but it will never drip stains onto the rug...

The following list of Top Ten educational packages for the Apple II is a personal selection by a reviewer who works with over fifty new products a year. All are suitable for an age range of 7-16 or above. Most will run on a rock-bottom minimum system (64K of memory, monochrome monitor, one disk drive, no mouse or joystick). Exceptions to this are noted. This does not imply that anyone should go out and buy a minimum Apple, although this is the best many schools can afford. The best Apple II software, increasingly, requires 128K of memory, and it supports the friendly mouse-based "user interface."

#### THE PRINT SHOP

Beginning as a simple utility for printing signs, greeting cards and banners, *The Print Shop* has spawned a little industry of add-on products and imitators. Since its first release in 1984 it has been continually upgraded, and has collected a long list of awards. It is probably the single most popular software product in schools. One reason is simple — learning to read, write and spell is a lot more interesting when you can see your own words all neatly composed, bordered and illustrated on the page. Another reason is more subtle — *Print Shop* teaches you the elements of effective graphic design by limiting and directing your choices. You cannot put too many words on a line, or mix too many fonts on a "page." It's hard to create an ugly layout in *Print Shop*.

*The Print Shop*, by David Balsam and Martin Kahn, requires a dot-matrix printer. The latest version supports color printing, and lists for \$49.95. If you run out of ideas after using it for a while, get *The Print Shop Companion* (\$39.95) which includes new type styles, borders, graphics and a calendar maker. Most Apple user groups have an extensive collection of public domain *Print Shop* graphics on disks available at nominal cost.

#### TYPE!

The keyboard is probably the greatest single barrier between people and computers. Touch typing is a difficult skill to master (many computer people never get the knack, since they spend their days shuttling between keyboards that are just incompatible enough to foil flying fingers).

There are plenty of good typing tutor programs, and if a learner is ready to devote some time and effort to practice, any of them will do the

job. *Type!* (\$44.95) looks good on a color monitor, has interesting lessons, and sophisticated diagnostics. The design is based on extensive research into how people learn to type.

#### WHERE IN THE WORLD IS CARMEN SANDIEGO?

The neglect of geography in American schools is a national disgrace. A whole generation may someday fight wars in countries they cannot find on a map. *Where In The World Is Carmen Sandiego* by Scott Shumway (\$44.95 list) is a detective game that teaches world geography by pursuing a gang of thieves from country to country. A copy of *The World Almanac* is included in the package. To track down the clues you have to learn how to use the reference book. Combining elements of adventure games, trivia, and color graphic animation, the product has been so successful with both kids and teachers that a sequel (*Where In The USA Is Carmen Sandiego?*) was developed.

#### THE OBSERVATORY

Astronomy is another subject that has been shamefully neglected in our schools. We can hardly become a spacefaring nation in the next century, unless kids today learn real stuff about the planets and the stars. *The Observatory*, by Gary J. Lassiter, is a simulation of the sky, as seen from any point on earth, at any time from 0 to 9999 A.D. For \$65, this gives you much the same capability as a planetarium costing tens of thousands of dollars. You can search for any object (was Mars overhead at the instant you were born?). You can put the cursor on any object and get a readout of its name, distance and magnitude (what was that star so close to the moon last night?). You can zoom in on any patch of sky, display the constellation lines or blank them out, and even see ancient eclipses of the sun. A detailed fifty-page manual accompanies the program. *The Observatory* is a must for future astronauts.

#### MUSIC CONSTRUCTION SET

The basic Apple II is not much of a music machine. The little speaker can emit only a limited range of beeps and buzzes. *Will Harvey's Music Construction Set* gets remarkable sonic results from this unpromising hardware. No previous knowledge of music is needed. You simply pick up notes and other symbols, plunk them down on a score and play back your creation. The program is immediately accessible to the beginner, fun to use, and it stays interesting as the user acquires more expertise. For serious musicians, a "deluxe" version of the program provides addi-

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1987 by Mike Markowitz.



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- or a Dot Matrix Printer .....

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|                                                    |               |
|----------------------------------------------------|---------------|
| Above Bundle w/20 Mbyte Disk .....                 | <b>\$1299</b> |
| Above Bundle w/20 Mbyte Disk & Color Monitor ..... | <b>\$1499</b> |
| AT Bundle w/Color Monitor .....                    | <b>\$1799</b> |



## AT COMPATIBLE SYSTEM

10 MHz, 512k Memory, Keyboard, FD/HD controller, 1.2 Mbyte floppy, 192 Watt P/S, Monochrome Monitor/card Made in the U.S., (30,000) Systems Installed, 52 Hour Burn-in & 30-day Money back Guarantee on the System Unit.

**\$1299**

Base AT w/20 Mbyte

**\$1578**

Base AT w/40 Mbyte drive

**\$1749**

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All systems come with a 1 yr. warranty on parts & labor. On-site, 24 hour response maintenance contracts are available.

### ACCESSORIES

| MONITORS                      |            |
|-------------------------------|------------|
| Casper Hi-Res Amber .....     | <b>'99</b> |
| Mitsubishi 16 Color .....     | <b>319</b> |
| Mitsubishi EGA .....          | <b>425</b> |
| Mitsubishi Diamond Scan ..... | <b>539</b> |

| DISK DRIVES                          |            |
|--------------------------------------|------------|
| Fujitsu 360k DS/DD .....             | <b>'89</b> |
| Seagate 20 MEG Hard w/cntl. ....     | <b>315</b> |
| Seagate 20 MEG Hard Drive Only ..... | <b>279</b> |
| Seagate 40 MEG Hard Drive Only ..... | <b>440</b> |

### MISCELLANEOUS

|                                            |              |
|--------------------------------------------|--------------|
| I/O Plus (ser/par/clock/game) .....        | <b>'59</b>   |
| Monochrome card .....                      | <b>42</b>    |
| Ser/par printer cards .....                | <b>39/19</b> |
| Migent pocket modem .....                  | <b>199</b>   |
| Everex 300/1200 int. modem .....           | <b>99</b>    |
| Everex parallel and serial card .....      | <b>59</b>    |
| Everex auto switch EGA card .....          | <b>135</b>   |
| Everex Internal 60 Mbyte tape Streamer ... | <b>625</b>   |
| Everex External 60 Mbyte tape Streamer ... | <b>750</b>   |
| IRMA IBM 327X Emulator .....               | <b>795</b>   |
| Migent In-House Accountant .....           | <b>79</b>    |

|                              |            |
|------------------------------|------------|
| Migent Ability .....         | <b>41</b>  |
| Migent Ability PLUS .....    | <b>199</b> |
| MS-DOS 3.21 w/GW BASIC ..... | <b>82</b>  |

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tional features, which requires some investment in additional hardware.

## TERM PAPER WRITER

For most Apple II owners, AppleWorks is the only word processor the family will ever need. An exception is the high school student faced with the ordeal of researching and writing a term paper. Term Paper Writer (\$59) provides a highly structured environment for the student, with a Notetaker ("card file"), an Outliner, a no-frills word processor, and a Footnoter and bibliography compiler. The latest version even provides a spell checker. This is a fairly complex product that requires a 128K Apple IIc or IIe.

## DAZZLE DRAW

Like any art medium, computer drawing programs are a tool for creative expression. Unlike other media, computer graphics are easy to modify, very compact, and not messy. There are so many Apple II drawing and painting programs, with so many features that it is hard to choose just one. Dazzle Draw is a high-end package that requires 128K and a color monitor. It works particularly well with a mouse and a composite color monitor (for technical reasons, the Dazzle Draw colors look a bit off if you have the more expensive RGB color monitor). There is a comprehensive help function that gives a concise explanation of any feature in the program. An "Undo" command allows painless recovery from mistakes. Printing your drawing is quick and easy, and color printers are supported.

## THINK QUICK!

The Learning Company of Menlo Park, California

consistently produces educational software that is thoughtfully designed, technically advanced and popular with kids. Think Quick! (\$50) is an adventure game based on the dungeons-and-dragons theme, but it is refreshingly free of the violence, greed and sex-role stereotypes that mar so many game programs.

Think Quick! is designed to help exercise problem solving, creative thinking, reasoning, and spatial visualization skills. It is also wonderfully non-threatening. At any point you can take refuge in a Hideout, where nothing bad can happen, and the clock stops. Nothing gets killed. You put the slime worms to sleep with flowers, and when you release the Magic Knight he chases the dragon away, instead of slaying it. A game in progress can be saved on a blank disk and restarted later. Advanced players can design their own castles to explore.

## SEVEN CITIES OF GOLD

This is probably the best historical simulation ever programmed. It places you in the role of Columbus about to set off for the New World. You have to outfit your ships, navigate across the uncharted ocean, negotiate with unpredictable natives, and explore a continent. To make sure that historical hindsight doesn't give you an unfair advantage, a completely new continent is generated for each game. You can't expect to find the Aztecs in Mexico every time—there may not be any Mexico.

This is a fairly long game that cannot be completed at one sitting. Colorful graphics, animation and sound effects make Seven Cities fun, but meticulous research makes it an effective learning tool.

## SCIENCE TOOLKIT

The Apple was designed with a "game port" that originally plugged into a pair of simple paddle controllers. Joysticks, mice, drawing tablets and many other devices were developed to use the same input connection. Science Toolkit provides two real scientific instruments that can talk to the computer via a special adapter plugged into the joystick port. There is a temperature probe (accurate to a tenth of a degree Fahrenheit) and a light meter sensitive over a range of 0 to 500 footcandles. Accompanying software lets you display, record and print out your heat and light measurements. The manual suggests a variety of simple and safe experiments. For \$70, this is a lot of instrumentation. It could be the basis for a great Science Fair project in the hands of a young Newton or Madame Curie.

### Product Information:

Print Shop, Type!, Where In The World Is Carmen Sandiego?, Dazzle Draw and Science Toolkit are published by Brøderbund, 17 Paul Drive, San Rafael, CA 94903-2102 (415) 492-3500.

Term Paper Writer is published by Activision, 2350 Bayshore Parkway, Mountain View, CA 94043 (415) 960-0410.

Think Quick! is published by The Learning Company, 545 Middlefield Road, Menlo Park, CA 94025 (415) 328-5410.

The Observatory is published by Lightspeed Software, 2124 Kittredge Street, Suite 185, Berkeley, CA 94704 (415) 486-1165.

Music Construction Set and Seven Cities Of Gold are published by Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404.

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## PC/XT COMPATIBLE SYSTEM \$495

- \* Turbo XT motherboard w/640K RAM (4.77/8MHz)
- \* XT case & 150w power supply
- \* Floppy disk drive
- \* Monographics w/printer port
- \* Floppy controller
- \* AT look alike keyboard
- \* **FREE** 10 PC-SIG software programs

### ADD-ON CARDS

|                           |      |
|---------------------------|------|
| 384 multifunction card    | 78.  |
| Multi I/O card            | 65.  |
| Monochrome graphics W/P   | 60.  |
| Color graphic card        | 55.  |
| Memory expansion card     | 42.  |
| Parallel printer card     | 22.  |
| RS-232 serial card        | 29.  |
| Game I/O card             | 18.  |
| Clock & calendar          | 29.  |
| Floppy controller w/cable | 32.  |
| XT hard disk controller   | 95.  |
| Everex 1200 baud modem    | 98.  |
| Everex 2400 baud modem    | 188. |
| Logimouse C-7             | 79.  |

### MONITORS

|                       |      |
|-----------------------|------|
| Casper TTL monitor    | 85.  |
| Quimax 14" monitor    | 128. |
| CTX 14" color monitor | 270. |
| NEC Multisync         | 540. |

### MOTHERBOARD W/BIOS

|                           |      |
|---------------------------|------|
| 640K XT Turbo motherboard | 92.  |
| 6/10 MHz AT motherboard,  |      |
| 0 wait state              | 370. |

## AT-286 COMPATIBLE SYSTEM \$995

- \* 6/10 AT motherboard w/512K RAM (120ns)
- \* 0 wait state
- \* 200w power supply
- \* Western digital floppy & hard controller
- \* 5339 AT enhance keyboard, (101 keys)
- \* Monographics w/printer card
- \* 1.2 Drive
- \* **FREE** 10 PC-SIG software programs

### PRINTERS

|                  |      |
|------------------|------|
| Brother 1409     | 359. |
| Brother 1509     | 395. |
| Brother 1709     | 565. |
| Brother HR20     | 399. |
| Brother HR40     | 735. |
| Citizen Printers | Call |

### HARDWARE

|                               |     |
|-------------------------------|-----|
| XT keyboard                   | 60. |
| AT/XT 5339 enhance keyboard   | 74. |
| Maxiswitch keyboard           | 95. |
| 150W XT power supply          | 55. |
| 200W AT power supply          | 85. |
| Printer cable                 | 8.  |
| 360K floppy disk drive (TEAC) | 89. |
| (FUJITSU)                     | 79. |

### MISC.

|                        |      |
|------------------------|------|
| Seagate ST-225 kit     | 300. |
| Seagate ST-238 kit     | 350. |
| Seagate 4038 30M       | 500. |
| Seagate 4051 40M       | 610. |
| 5 1/4" DS/DD diskettes | .60  |
| 5 1/4" DS/HD           | 1.40 |

## SOFTWARE

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- \*078—PC Write V2 165—popular and powerful \*
- \*273—Best Utilities—printer spooler, filter search, more
- \*274—Best Games—Pacman, Breakout, Wizard, more
- \*293—Arcade Games—(color graphics required)
- \*405—DeskMate—more than a sidekick
- \*457—Greatest Arcade—the best of the best games
- \*528—New York Word—sophisticated word processing, 1 of 2 \*
- \*529—New York Word—2 of 2 \*
- \*557—Pinball Alley—from simple to complex pinball games

Directory of over 700 IBM disks—12.95

### NEW TOP TEN FOR APPLE

PUBLIC DOMAIN SOFTWARE \$5.00/DISK

- EXCHANGE Authorized Dealer
- \*037—FREEWRITER—word processor (Apple II+ needs paddles)
- \*038—BUSINESS/HOME MANAGEMENT—checkbook, calculator, more
- \*039—BEST OF BUSINESS—general ledger, payroll, much more
- \*056—BANK'n'SYSTEM—check balancer, write & print checks
- \*057—OMNI FILE—data base with instructions
- \*064—BEST OF EDUCATION—math drills, spelling, typina, etc
- \*085—BASIC MATH DRILLS—fractions, multiple choice, work problems
- \*118—GAMES—fast action space arcade games
- \*190—PASSIONS—nude women, game
- \*213—BEST UTILITIES—Diskcat, Krunch, Diskcheck, Diskmap, etc

Directory of more than 200 Apple II disks—\$6.95

### NEW TOP TEN FOR MACINTOSH

PUBLIC DOMAIN SOFTWARE \$9.00/DISK

- EXCHANGE Authorized Dealer
- \*005—CODE CRACKING, FEDIT—edit file blocks in ASCII or hex
- \*006—ResED and ReED—edit menu bars, icons and ID numbers
- \*007—SWITCHER—edit multiple Microsoft BASIC files
- \*029—COMMUNICATIONS—Red Ryder and MacTap
- \*037—SLIDE SHOW
- \*039—FONTS—font catalog
- \*045—DESK ACCESSORIES—Minifinder, timer
- \*062—GAMES—Dungeons of Doom, Baseball demo
- \*067—GAMES—Billiards, volleyball, juggling
- \*086—BEST OF MAC—MacWorld 86

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## 386 system: .....\$1950

1MB 100NS RAM installed, 384K for system, expandable to 10MB, 1.2MB floppy drive. Western digital hard & floppy disk controller, 200W power supply, case, enhanced key- board.

### 286 system: (10/6 MHz)

512K on board, expandable to 1MB, 1.2MB floppy drive/controller, 200W power supply, MGP or color card, AT keyboard.

**\$869**



### Turbo XT system: (8/4.77MHz)

256K on board, expandable to 640K, 150W power supply, 360K drive/controller, MGP or color card, AT style keyboard.

**\$379**



### SYSTEM BOARDS:

|                                     |        |
|-------------------------------------|--------|
| 386 (16mhz)/1024K .....             | \$1750 |
| At (10/6mhz)/0K .....               | 360    |
| XT turbo (8/4.77mhz)/0K .....       | 80     |
| AT (15/8MHz) 1024K, 100NS RAM ..... | 795    |

### SEAGATE HARD DISKS:

|                                     |       |
|-------------------------------------|-------|
| 20MB ST225 (65MS) .....             | \$240 |
| 30MB ST238 .....                    | 255   |
| 40MB ST251 .....                    | 489   |
| 30MB ST4038 (38MS) .....            | 520   |
| 40MB ST4051 .....                   | 610   |
| 80MB ST4096 .....                   | 850   |
| 20MB Macintosh SCSI Hard Disk ..... | 580   |

### INTERFACE CARDS:

|                                                  |      |
|--------------------------------------------------|------|
| Disk I/O .....                                   | \$65 |
| Floppy disk controller .....                     | 23   |
| Monographic/printer card .....                   | 55   |
| Color/printer card .....                         | 56   |
| Color card .....                                 | 47   |
| 1.2MB floppy disk controller .....               | 65   |
| EGA card .....                                   | 145  |
| W.D. WX1 hard disk controller/cable .....        | 75   |
| W.D. WA2 hard/floppy disk controller/cable ..... | 165  |
| W.D. RLL controller/cable .....                  | 105  |

### KEYBOARDS:

|                                 |      |
|---------------------------------|------|
| AT keyboard .....               | \$49 |
| XT/AT keyboard .....            | 47   |
| Enhanced RT type keyboard ..... | 69   |

### POWER SUPPLIES:

|                   |      |
|-------------------|------|
| 150w for XT ..... | \$49 |
| 200w for AT ..... | 79   |

### MONITORS:

|                                 |       |
|---------------------------------|-------|
| NEC Multisync (14") .....       | \$540 |
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## Info About.info Files

By Matthew Leeds

**T**he Xerox Star started it, and the Mac popularized it. Graphical interfaces using a mouse, menus, and icons are showing up everywhere. The Amiga's graphical interface is known as the Workbench. It offers a standard user interface for applications, an easy-to-learn interface for users, and a great deal of hidden power and potential. To tap into some of that potential, it's important to learn something about how the Workbench works.

The key to using the Workbench is found in the icons displayed on its screen. Each of these icons is linked to a file, usually either a data file or application. Other icons represent the Trashcan (a unique application), subdirectories (or drawers), and disks. I'll examine each type of icon in turn.

Disk icons in many ways are the simplest. They represent a storage medium: floppy or hard disk, or RAM. Double clicking on a disk icon will open a window displaying any icons in the root directory of a disk. You can get additional information about a particular disk by single clicking on its icon, and then using the INFO command in the Workbench menu. This will call an application known as INFO and then examine the Disk.info file for additional data. You will see displayed the number of free bytes and blocks on the disk and its current status (read only, read/write). I'll go into more detail regarding the INFO command later. You can use a disk icon to make a copy of a disk by dragging the disk icon onto the disk icon of the disk you want to copy to. You cannot place a disk icon inside of any other window—it must reside on the Workbench screen.

The Trashcan icon is also a simple icon. It cannot be moved from the window it resides in, which is the window that opens when you first click on a disk icon. It is possible to move it using the CLI, but that's another matter. What's important to remember is that the Trashcan icon is a unique type of icon.

Drawer icons are connected to subdirectories. When you double click on a drawer icon, a new window opens and any files in that subdirectory with associated icons will be displayed. You can nest drawer icons inside other drawer icons, and moving a drawer icon moves all of the files contained in the associated subdirectory. You can also use this to copy entire subdirectories from one disk to another by moving the drawer from one disk window to another.

There are two other icon types: project icons that represent data files and tool icons that represent application files. These two icon types are the most common and the most useful. With

just a basic understanding of how they work you can gain a great deal of control over your Amiga (down, sit, roll over).

Not all files will have icons associated with them. You can see this by opening a CLI window and calling a directory of any disk. You will notice some files seem to have duplicates with a .inf appended to them. These are the icons associated with a file. For some files there is no need to have an icon; for example, printer drivers have no icons, nor do font files. Since these are data files, you would not normally have a need to call them from the Workbench.

There are many instances in which you will want to have access to data files from the

window will show the filetype for the datafile.

The default tool window lets you set the path to an application, and what application a project will call. Most applications that create icons for their data files expect to be located in a particular directory, and if you move them their data file cannot find them. This is what occurs when you click on a project icon and either nothing occurs or the screen flashes. If you know where the application is, you can use the INFO command to change the default tool or path for a project. One example of this is Flow, which expects that you will always boot projects from a disk called Flow. By changing the default tool in the Flow project icon you can get around this minor problem.

For some applications no default tool type is set. You can still use the project icon to load both the application and the data by single clicking on the project icon, holding down the shift key and double clicking on the tool icon.

You can make duplicates of any file and its associated icon by single clicking on the icon and using the duplicate command from the Workbench menu. This will produce a copy named "copy of ...". To change the name of the copy, single click on its icon and use the rename command in the Workbench menu. This will bring up a single line window with the current name inside. Make your changes and just press return. You can rename any icon type in this fashion.

At some point you may want to customize some of the icons you use. You can edit existing icons to new icons or create new ones from scratch. Commodore provides the *IconEd* program in the System drawer of your Workbench disk. An excellent tutorial on its use can be found in the 1987 Special Issue of *AmigaWorld*. For those of you with the 1.2 Extras disk there is also a program called *IconMerge* that lets you create "animated" icons, icons that change shape when you click on them.

If you are interested in creating your own icons, I recommend you also consider several programs that are available from public domain libraries, such as the Fish Disk series. The *Brush2Icon* program will convert an IFF brush to an icon. This lets you use programs like *Deluxe Paint* to create icons. *IconType* will let you change an icon's type, which is very important as there are limitations in editing existing icons; you cannot save an edited icon as other than its original type. *IconMaker* will make icons for files that do not have icons.

I should also mention that Pete Goodeve has released a new version of his shareware program *Xicon 2.0*. This is a remarkable utility that lets you create icons that execute script files, execute CLI commands, display text files, and a whole host of other functions. This is a must-have for anyone who hacks around in Workbench, needs CLI commands and hates to call CLI.

---

**At some point you  
may want to  
customize some of  
the icons you use.  
You can edit existing  
icons or create new  
ones from scratch.**

---

Workbench, and this is where the project icon type comes in handy. You can call an application when you double click on the project icon. A prime example of this is clicking on a notepad file icon. This loads the notepad application and then loads the notepad data file. You might ask, how does this happen? Well, fire up your Amiga and follow along.

Single click on a notepad data file and then use the INFO command from the Workbench menu (it's the one on the left). The window that opens will contain quite a bit of information. At the top you will see the name of the icon you've selected. Below that you will see the icon type and size of the file in bytes and blocks. There is also a window labeled "stack". This is normally left at 0000 for project icons. The file status is shown to the right.

Below are three small windows; comment, default tool, and tool types. The comment window is the filenote attached to the file, and most likely is blank. You can add a comment, if you like, by clicking in the window and typing your comment. The default tool window will show the path to the notepad application and the tool types

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.



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## New Trends For Atari *Federated And The Mega*

By Helmi Kobler

**A**tari's made a name for itself by providing powerful, low cost computer equipment over the last two years. Now it looks like the company may be trying to repeat that success in the consumer electronics market. Can you imagine owning a stereo, VCR or even a television with the Atari label?

Electronics equipment like that may be a year or two down the line, but signs indicate that it's on its way. The obvious sign is Atari's purchase of The Federated Group, an electronics retail

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**According to Atari chairman Jack Tramiel, the Federated purchase is a key element in Atari's new attempt to recapture the consumer electronics market from the Japanese. "There are no consumer electronics companies today in the United States," he said. "We need to rebuild that, and I think we can do it."**

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chain made up of 67 stores throughout California, Texas, Arizona, Kansas and New Mexico.

These stores are typically huge acre-sized barns that stock everything from answering machines to audio and video equipment to personal computers. But what could retail electronic stores have to do with a computer company? According to Jack Tramiel, Atari's chairman, they're a key element in Atari's new attempt to recapture the consumer electronics market from the Japanese! "There are no consumer electronics companies today in the United States," he said, referring to the likes of General Electric, which dropped out of the market a while ago. "We need to rebuild that, and I think we can do it."

Tramiel, though, has not said exactly what he

intends to fight the Japanese with, but suggested an upcoming line of electronics products that will be sold through the Federated chain, giving them immediate distribution in certain parts of the country. People are guessing, though, that one Atari product waiting in the wings may be the compact disk player it's been talking about since 1985. It won't be limited to CD-ROM applications, but will also be able to play the audio CD disks you find in record stores. Audio CD players are selling for as low as \$150; if Atari's can approach that low price, it may wind up a hit in both the computer and music worlds (assuming, of course, that Atari can get it out the door. The CD disk player is nearly two years tardy).

It's a little unclear if Atari's purchase of Federated may also be designed to strengthen distribution of the 520 and 1040 STs in the U.S. Jack Tramiel has denied this, but Gregory Pratt, Atari's chief financial officer, said "We made the purchase principally to add distribution for our retail computer line."

Then there's the premise that Atari bought Federated because it's a potential money-maker. It grossed \$429.9 million in the last fiscal year (Atari's revenues were \$258 million) but was nonetheless in the red. If Atari can make Federated profitable again, and there should be no doubt that it will, then it'll mean more money in the ol' purse for Atari.

In any or all cases, though, there's one thing about the Federated purchase that we can all agree on: Commodore can certainly cancel its plans to sell the Amiga 500 and 2000 through the Federated chain. That's for sure.

### News On The Mega

Some news on Atari's Mega STs — they've recently undergone a slight name change. Atari has dropped the "ST" identifier and is now simply calling the machines the Mega 2 and Mega 4. You might construe this as part of Atari's effort to market the Megs as "business" machines, instead of mainly home/small business computers, as the 520 and 1040 are typically perceived.

The Megs' new list prices are also clearly intended for the professional market. While Atari had originally announced the four megabyte monochrome Mega as listing for around \$1700, that price has been boosted to \$2399, with a color system at \$2599! The Mega 2 seems to have taken the Mega 4's place at \$1699 for a monochrome system and \$1899 with color.

Finally, Atari is making sure that the Megs are distributed separately from the STs. All 520 and 1040 dealers have had to re-apply for Mega dealership. This is to insure that the top-of-the-line Megs are not sold in any stores that don't convey the right business image.

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**Atari is concerned with its Mega dealers' ability to provide after-purchase support and service. Another criterion is that a Mega dealer must have an outbound sales force that, operating outside the store, approaches the business community with the "Mega solution."**

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Image isn't all there is to being a Mega dealer, though. Atari is concerned with its Mega dealers' ability to provide after-purchase support and service. Another criterion is that a Mega dealer must have an outbound sales force that, operating outside the store, approaches the business community with the "Mega solution."

The Mega philosophy is new to just about everybody who has had anything to do with Atari since the 520 was released in '85. For Atari, it means selling a computer that doesn't compete in the low-end market but instead with the likes of Apple's Macintosh and IBM AT clones — a first for the Tramiels, I think. For the Atari dealer, it means adopting new policies to avoid being locked out of a new generation of machines. For the Atari ST user, it means the opportunity to step up to a more advanced, professional machine, but at a cost of well over \$1000.

The obvious question is whether the Mega will survive after breaking all the conventions of the Atari world. Will buyers be interested in paying for a Mega when the same dollars will buy a Macintosh Plus or SE? Will enough professional software be developed for the Mega to persuade businesses and professionals into buying Atari instead of IBM or Apple? Will Atari, in being so selective with its Mega dealers, actually recruit enough to sell the new machines in large volume?

In taking Atari and the ST into new markets, the Mega invites deep analysis. Pretty soon, though, whatever questions exist regarding the Megs' performance will be answered. Atari has begun shipping the Megs in Europe and has sent a few machines to the press and some developers in the U.S. They should hit the shelves here before November ... I hope. □

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.



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# Telecommunications Programs In CP/M

By Robert D. Athey Jr.

**B**efore we start in on the phone/modem computer connection and communications programs, it's mail time again. I get letters — letters from Europe! A computer club in Poland is looking for aid in the form of newer computers or money or even pen pals. They have two Timex 2048's and an Atari 800XL, but no disk drive or printer. They do programming in C, BASIC, PASCAL, and FORTRAN, as well as Z-80, 8080 and 8086 assembly languages. Write Z. Dziekonski, 82-200 Malbork, Osiedle XX-lecia PRL 18A/2, Poland.

As I have been advocating the user groups, a letter from ACUTE (American Computer Users Temporarily in Europe) gave me quite a chuckle. They need catalogs of software and demo disks, including those on MS-DOS systems, as they are a multibrand club. Write to: ACUTE, Postfach 4, D-8818 Lehrberg, West Germany.

Speaking of the European connection, a conversation with Guy Romano, the CP/M help person I recommended recently, gave me insight into the need for computer help in Europe. He knows 17(!) languages (not counting computer languages) and he needs them as he answers calls for help from all over the world. His emphasis is on the T1 99-4A and the DEC Rainbow. He also shows up occasionally on the local RBBSs as a contributing caller. He does not run an RBBS of his own, but can be reached at (415) 753-5581. He answers letters within 24 hours. You can write him at 116 Carl St., San Francisco, CA 94117. He has been acting as an information clearinghouse, with help for computer users, for eight years. In addition to his technical expertise, he is an artist (Ph.D. in Fine Arts from a European university) as well as an empath to the user.

## COMMUNICATIONS WITH CP/M

The use of the computer to communicate over telephone lines is a great advance in many ways. You can not only send text or numbers, but also programs or libraries of programs and documentation. I found the electronic bulletin boards a complete social milieu, varying from the chatty high school gang to the college student escaping the grind of a mechanical engineering curriculum to the artists and engineers of the workaday world and the retiree in a new element. It offers a broad range of entertainment, politics, philosophy and instruction (especially from the traders of information on how to use these electronic "idiot savants" we call computers).

For the new user, it's a great way to find help. There are a great many experienced users out there who delight in telling you how to reconfigure your printer through electronic commands. They have whole reams of information on how to "patch" your WordStar or other program to make it usable or useful (or even to make the

unworkable work). I depend heavily on Ken Fowler, Bond Shands, Dick Ezzard and Woody McPheeters to get me through the new and unfamiliar.

There are many programs around to help you operate a modem and handle the chores needed to transfer data across the telephone line. I use MDM740, an older program constructed by Irv Hoff, because it is relatively simple to use and has the transmission and capture capabilities I need. More powerful programs (like IMP, MEX., KERMIT and others) are yet more complex, and I haven't taken the time to figure them out. However, they have advantages over the simpler MDM740.

The MDM740 program comes with a second, and even simpler, program called M7LIB.COM that constructs the list of telephone numbers used in the MDM740 program. The M7LIB program opens up the MDM740.COM program to insert the numbers you want to add, or to delete the numbers you no longer use. To make these changes, you type in "M7LIB MDM740.COM" and the program shows you the list it finds in MDM740 with a query "Does this look correct?" You type in "Y" for yes to continue. It then puts the same list on the screen, with the commands on the bottom line.

The command set is really simple in M7LIB. The print command will print the list on your printer, which is very handy. The save command terminates the program after any changes have been inserted into MDM740. The toughest command is the change command, where you have to insert the label and number with at least one period preceding the number. I have the "1170" preceding any number I use in the daytime, to make sure the call waiting feature is turned off. I hear call waiting is a terror for people operating RBBSs. The "bomb out" disconnection you get from incoming calls on call waiting can do strange things to the RBBS software on occasion.

Using MDM740 is also easy. Just type in "MDM740," and you'll get the opening screen. My first move is to get the system to 1200 baud with the "SET" command, as shown in that same figure. You can find out what other settings are embedded in the program by typing a "?". The extended command list rolls up as three screens.

The most useful commands for me are the "DIR" command showing the directory of any disk drive you designate, the "T" command to get out of the computer and into the modem, and the "CPM" command to quit and go back to the operating system "A>" prompt. The "T" command will allow you to keyboard directly to your modem, if it is a "smart" modem, so you can change settings (baud rate, line feeds, parity, etc.). Some modems will allow you to call directly from them, rather than from the MDM740 program, and you can make other changes in the modem, too.

Another use of the MDM740 "T" command is to set up a capture buffer on a disk with the

allows you to capture any text or messages you read on an RBBS by using the <CONTROL>Y to open the buffer while you are connected to the RBBS. The program will show the text being captured by having a semicolon in the left-most column on the screen as the text rolls past. The buffer will start to load up the file on disk, after it exceeds 16K, and you have to make sure the disk has enough room for the file. Indeed, you'll sometimes capture a file of 75K if you aren't watching, and then what will you do with it? I edit such captured files, and only print those portions I'll use later. (I always captured the games I participated in on House of Games, but I have no time for those lately. Sorry, Ksnarlsk.) The capture can be turned off by a <CONTROL>R.

You can escape to the MDM740 program from the modem (while connected to an RBBS or not) by using the <CONTROL>E command. While connected to an RBBS, a great way to check the directory of the disk, is by using the MDM740 "DIR" command. This way you can make sure that the file name is exactly the way you want it before you send it.

The easiest way to send a file while connected to an RBBS is the <CONTROL>T command. You will be offered an option as to whether you want time delays between letters or not. You'll need the time delays for some RBBSs but not for others. For instance, BAKUP at (415) 849-9389 receives garbage without the time delays. If you can get away without using them, the time savings are considerable. 1200 baud with time delay seems slower than 300 baud without it.

One feature of MDM740 I like is its support of XMODEM or Christensen protocols. That means the RBBSs that use a program called XMODEM can zip files to you faster and vice versa. This requires that you give the XMODEM set of commands while connected to the RBBS, and then get immediately into MDM740 with the <CONTROL>E command. You then use the "R" or "S" signal with the filename to get the transfer going, for example, use "R BAKUP.LST" to receive a list from the BAKUP RBBS. This file will be received directly onto the disk. The reason this transfer is so much faster is that 128 bytes are sent at a time, instead of one letter at a time. My friends tell me I am missing out, as the newer programs shoot 1000 bytes at a time. I don't do that much in the way of transfers, and the ones I do are small. As I said, I'll stay with MDM740.

I set aside an hour or two a week to try some modeming. I catch up on the news of BAKUP, and occasionally get onto another RBBS. The KAYFOG board by Bond Shands is very conversational in tone, and there are others like it around, too. Some of the feedback I get on the columns is on the RBBSs, though most of it is along other lines. I don't do as much gaming by modem as I did in past years, as I don't have the time available. I did enjoy House of Games and POPnet, however. I have MDM740 and M7LIB on both my '82 Kaypro II and the ON!, and they work out well with both. □

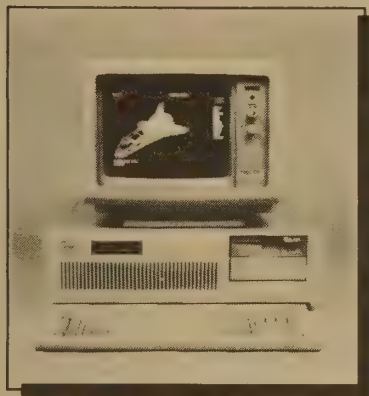
Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. Copyright © 1987 by Robert D. Athey Jr. All rights reserved.



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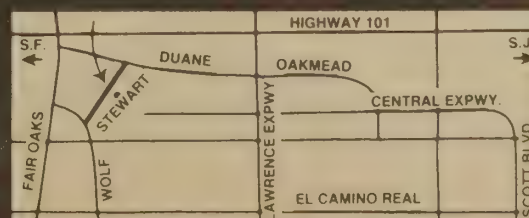
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**G**reetings once more from your newly-returned-from-vacation correspondent, who has spent the last two weeks involuntarily exploring the lamentable state of telephones in the Motels Of America. It's a jungle out there, folks. You take your Mac and Pocket Modem on the road, and rare indeed is the accommodation that lets you use them. You find phones hard-wired into the wall. Direct-dial phones that aren't modular. Modular phones that aren't direct-dial. (Some of my hacker buddies offered helpful suggestions for disemboweling the phones in question to make them do my bidding. However, one of the blessings of advancing age is knowing my limits.)

And, in various locales in the Rocky Mountain states, there are some puzzled innkeepers still wondering why that strange woman was so tearfully grateful for proper modem setups. They've obviously never experienced WELL Withdrawal.

In all seriousness, it seems to me that some Arthur Frommer of the micro world would be performing a great service (and, who knows, might make a few bucks in the process) by listing hotels, motels, etc. around the country whose phone equipment permits the use of decent (i.e. 1200 baud and up) telecomm equipment. Such a guide would, I think, be a godsend to the hordes of business travelers, correspondents, and other telecomm-dependent types on the road every day. Further, I think those lodgings that do offer such facilities should advertise the fact loudly.

If anybody has suggestions about this matter, let me know. Especially anybody who knows if such a guide, online or otherwise, already exists. Since my approach to these matters was based largely on befuddled ignorance, the whole thing may actually be a non-problem. (Extra credit will be given to anybody with specific and usable info as to how to get online from Telluride, CO, an otherwise delightful place...)

Moving along to subjects slightly more germane than Vacation Horror Stories, we have a cry for help from the folks at **Artcom** in San Francisco. Seems they've been trying to call **The Players Club Network BBS**, a board formerly listed in our pages which was operated by the **Committee for National Theatre Week**. They've called the listed number (415/771-2051) without success, and can't find anyone who knows how to reach these folks. If you know, you can send e-mail to **artcom** on The WELL (415/332-6106) or send mail to me at the **MicroTimes** office, and I'll pass the word along.

**Tom Lanman** of Montebello is starting a new association to study the possibilities of 32-bit architecture. Says he, "There seems to be no association around Los Angeles that brings users and other interested individuals together for the purpose of sharing knowledge of and examining the realm of the UNIX and OS/2 operating systems, and existing and eventual software for these advanced operating systems. I am a computer operator as well as a user of an AT clone who is interested in the development and promotion of advanced applications and systems software that taps into the powers unique to the 32-bit architecture, such as that found in the new Macintosh II and the IBM Model 80.

"I intend to form a group with the above-described emphasis. The group would meet once per month in the San Fernando or San Gabriel Valleys. It is intended primarily for current users of MS-DOS and UNIX/XENIX/UNIX, and could also serve as a forum for programmers. Anyone interested should contact me at (213) 725-1769 (leave message)."

Also on the subject of programming, **Curtis Jones** of the **APL (A Programming Language) Bay Area Users' Group** invites interested parties to attend the group's September meeting, which takes place September 14 at 7:30 pm at I.P. Sharp Associates, 220 California Avenue, Palo Alto. **Dr. Harlan Crowder** of IBM Santa Teresa will be discussing APL2 High Performance Processing Techniques. Adds Curtis, "Harlan's an excellent speaker. Too bad he'll be talking about APL2 for mainframes..." But if you're interested in APL and don't mind a little mainframe talk from time to time, check it out. If you need more information, call Curtis at (408) 292-4060.

The Los Angeles chapter of the **Association for Women in Computing** invites inquiries from prospective new members. It offers a variety of programs and services, including a newsletter, monthly meetings with speakers of interest to the membership, and field trips. Members come from a wide variety of occupations and interests, and past topics of discussion have included everything from career planning to operating system security to corporate politics to computer generated music applications. So if you're a Southern California Woman In Computing, the Association suggests that you write to their Program Chair at P.O. Box 3966, Torrance, CA 90510, or call (213) 657-0327 for more info.

**Sam Gold** writes in with the news that the **Peninsula Commodore Group** has ceased to exist. All is not lost, however; Sam hastens to add that a new group, **CO-OP, the Commodore Owners Of the Peninsula**, has been formed to support users of C64/128 and Amiga computers. Meetings are held on the third Saturday of the month from 1 pm to 4 pm at the Foster City Recreation Center, 650 Shell Blvd. (corner of E. Hillsdale), Room 103, in Foster City. Memberships are \$25 per year; non-members will be charged \$2 per meeting. For more information about CO-OP, write to P.O. Box 280495, San Francisco, CA 94128, or call (415) 595-8770.

And now for some, er, vertical user groups. On the Strictly Business side, we have the **Bay Area Automated Mapping Association**. According to correspondent Jake Armstrong (who's silent on the subject of whether he's related to the Wheaties-eating branch of the family), "B.A.A.M.A. is an association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur in odd-numbered months at various locations throughout the greater Bay Area." Interested parties are invited to write to P.O. Box 1427, Mill Valley, CA 94942, or to call Jake at (707) 253-4351.

On the Not-So-Strictly-Business side, we've got **Bob McLean** from beautiful Pacheco, CA, who's starting the **FOOTBALL (Free Open Organization To Better All League Logistics) NFL Study Group**, just in time for the season which is surely upon us. The group is open to all, and will feature a BBS which will go on line September 13 (cleverly coinciding with the beginning of the NFL season). At least in its early stages, the group will also meet monthly.

Bob says he's developing a power algorithm "that will help develop computer skills by following your favorite team and players. This is for the serious football fan who will join in research groups to learn more about each team's strengths and weaknesses." Less hardcore fans, including neophytes and football widows of either gender, are also cordially invited. You can write Bob at The Construction Factory, 115 Aspen Drive,

Pacheco, CA 94553, or call him at (415) 685-9366 or (415) 432-4526.

As usual, this month's mail brings an abundance of BBS listings, including some from saintly souls who actually tell us when a board goes out of operation (consider how much you like modem screech at 3 am...). But there are definitely new ones coming as the old ones go, apparently limited only by the seemingly infinite variety of human imagination and interests. A few examples: **Makom Ohr Shalom BBS**, (818) 609-1808, 24 hours, 8-N-1, 300/1200, a Jewish BBS with chat mode, downloads and public boards on religious, secular, and humorous themes; the **Ump's Video/Communication BBS**, (213) 413-1146, 4pm-2am, 300/1200, a free board which offers a comprehensive database of popular and hard-to-find videotapes and motion pictures in both Beta and VHS, as well as message and order bases for purchasing or trading videos; the **Telenaut BBS**, (415) 574-5335, 2400/8-N-1, 24 hours, specifically for graphic arts professionals including designers, illustrators, and art directors, providing a forum to discuss computer graphics and digital delivery of images; the **Cryonics And Immortality BBS**, (714) 734-0139, 3pm-6am Pacific time, 1200/8-N-1, which is an information exchange for immortalists and cryonicists.

Then there's a somewhat mystifying communique from someone known only as **The Force**, who evidently holds forth at the Bellflower Public Library. Mr./Ms. Force would like to inform you of two things—an incipient group for Apple and Franklin users called the **Driveway Group Limited**, devoted to special interests of programmers and software trading, meeting dates and times TBA. Seeming a little Unclear On The Concept, The Force also wishes to announce a modemless BBS called **Star Wars Lovers of America**, which is not, I hasten to add, an SDI Fan Club, but rather dedicated to the enthusiasts of George Lucas' works. Says Force: "If you have the Star Wars collection, figures, any software that pertains to Star Wars, then call. We could trade, buy, or sell items that have value. Also you will be informed on the new releases from the creator of Star Wars, George Lucas. We love Star Wars and George Lucas; if you do, then please call." Inquiries about either group should be directed to The Force at the aforementioned Bellflower Public Library, (213) 867-7724; if you have too many Death Star Commanders and want to trade them for a nice Princess Leia, this is the place.

**Late-breaking bulletin for you Mac users**, especially if, like me, you're well on your way to becoming a HyperCard religionist: Go to SOS Computers, 362 S. La Brea, LA 90036 (213/857-0371), mention that you saw this item in **MicroTimes**, and they'll give you a free copy of HyperCard. (Quantities are limited.)

And, hoping I have not incurred the undying wrath of the librarians of Bellflower, I now depart for another month. Keep up the steady flow of info—email should be directed to **microx** on The WELL at (415) 332-6106, and US Mail should come to 5951 Canning Street, Oakland, CA 94609. Thanks, as ever. □

## BULLETIN BOARDS

065

**Remote Bulletin Board.** (065) 242-7669 (Singapore). 24 hours, N-8-1, 300/1200/2400, UL/DL 67 meg. Sysop: Umar A. Rahman.

206

**The Board Of Review.** (206) 361-8018. 300/1200 baud, 8-N-1, 24-hours, Commodore. Sysop: Ron Strauss.

**28 Barbary Lane.** (206) 323-2828. 300/1200 baud, 8 bits, 1 Stop Bit, Full Duplex, No Parity, 24-hours. Sysop: Mrs. Madrigal.



**Region 7 TEC Center BBS.** (209) 571-5085. Specializing in music and schools. 24 hrs, 300 baud. Sysop: Dan Guerra.

**Inn Finitv BBS.** (209) 521-6240. Inn Finitv is an Atari based BBS. Operates on a 130XE with 320K. Signalman 300/1200/2400 baud, 24 hours a day. ATASCII—ASCII. Sysops Buzz and Jann Kelley.

**Bullseye BBS.** Stockton, CA. (209) 474-FIDO. IBM and compatibles. 300/1200/2400 baud. Open 24 hours, 8-N-1, FidoNet 161/31 Valley PCUG. Sysop: Bob Loeber. Validation required. Lots of MS-DOS shareware.

**The Spotlight BBS.** (209) 368-5591. 300 baud, 24 hours, 8-N-1, dual drive Commodore 64 operated. Sysop: The Spot.

**Bertha Board.** (209) 239-9853. 8-N-1, 300/1200/2400 baud. 24 hours. MS-DOS oriented, with emphasis on programming source code. Free. Sysop: Ken Roach.

**Motherload-64 BBS.** (209) 754-5530. 8-bit, 1 stop, Punter and X-Modem, D-load, 9:30pm to 6:30am only! 300 baud. Motherload-64 is run by a programmer who is also a Plus/4 owner. Sysop: Larry Anderson.

## 213

**Lynzie's Motherboard** (818) 508-6482/(213) 650-0519. 24 hours, 300/1200/2400 baud, 8-N-1. Private E-mail, download library, dating matchup, interactive chat between users, 4 phone lines on rotary. Public boards include employment, food and restaurant reviews, sci-fi, political, debate, for sale and many more. Monthly social happenings for local users. Sysop: Lynzie Flynn.

**Bulletin Board System.** BBS devoted to handicappers and racing fans in So. Cal. On line every weekend. Log-on: race data for Santa Anita, Hollywood Park and Del Mar. (213) 934-6026.

**Videodrome BBS.** Where computers and video meet. (213) 324-5882. Open weekdays 4 pm - 2 am, weekends 12 pm - 2 am. A Commodore 64 system.

**HUG1.** (213) 874-8256. 300/1200 baud, 8-N-1, 24 hours. The official BBS of the Hollywood Commodore User Group (HUG). All HUG members and visitors are welcome to drop by. Sysop: Jose Vasques.

**The Wargames RBBS.** Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest PC news, special news reports, BBS listing, messages, e-mail, downloading/uploading, color/music online. Best of all, it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Jason Lin (213) 393-9777.

**International Collectors Network.** Coins, stamps, baseball cards, books, records, antiques and anything collectable can be bought, sold, or traded on the International Collectors Network BBS. Regional lists of collector events and shows in many categories. Also names and addresses of many collector organizations. Accessible using PC Pursuit. Data phone available 24 hours, 7 days at 300/450/1200/2400, 8, N,1. (213) 204-0646.

**The Computer Consultant's Network.** (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

**Computer Conference Center.** (213) 212-5267. TBBS v. Commodore, IBM, TI, Atari, Epson, Apple etc. sub-boards. Large DL with CP/M, MS-DOS and TR-DOS programs. Laurie Flood, sysop.

**Hughes Aircraft Message Service.** Uploads and downloads for Mac, IBM, Commodore, Atari, etc. Public message boards. (213) 549-9640. 300/

1200, 24 hrs., 7 days.

**Monolith-1.7** great public boards, private electronic mail, social events. (213) 659-JEDI. 24 hours, 1200/300. Sysop: Erik Goldman.

**Mid-Cities Atari ST BBS.** (213) 1200, 8-0-1, 24 hours. (213) 867-1943. Sysop: Darin Ferraro.

**PC Heaven.** A multi-computer BBS that features downloads for many different PCs. E-mail, files for various machines, general to SIG message bases. No fees, no special application request forms. Just a fun BBS for everyone. (213) 374-7929. 300/1200, 7 pm-7am M-T, 24 hrs. F-S-S. Sysop: Tony Reeves.

**Tele-Web.** (213) 372-4050. 300/1200, 7-1-N, 24 hours, multi-user. **MicroTimes Electronic:** Southern California edition of *MicroTimes*. Articles, events calendar, BBS and user Group listings for Southern California, classifieds. Type GO MICRO.

**Home Loan BBS:** Up-to-date home mortgage rates supplied to you by Pacific Mortgage Group, a company that prides itself in getting you low mortgage rates. Rates are updated weekly. Type GO LOAN. **Dining-Line:** South Bay database of online restaurant menus. Menus may be searched by type of cuisine, price of a meal, name of restaurant, etc. Database includes complete menus and a community forum. Type GO FOOD. **LA Weekly Electronic:** electronic version of LA's largest weekly entertainment newspaper. Includes feature articles, calendar and events listings, classifieds and more. A new edition each week. Type GO WEEKLY. **Easy Reader Electronic:** electronic edition of the Easy Reader newspaper. Includes feature articles, weekly calendar, night club listings and classifieds in over 80 categories. Type GO EASY. FREE.

**T.U.S.D.** (213) 533-4545. 10+ megs downloads, WWIV software, BBS list, several message bases and SIGs, mail, online help. Run on IBM AT, 24 hours for summer (5pm-7am during school). Free, 300/1200 baud. Sysop: Wayne Hoover.

**Jukebox Bulletin Board (JBBS)** (213) 670-8053. 8-N-1, 24 hours, 7 days, 300/1200 baud. Message board for buyers, sellers, and anyone interested in antique jukeboxes. Free. CP/M password available on request. No Fees. sysop: Ray Etchepare.

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**Videoman RCP/M and Media Man Database.** (213) 666-8588. 300/1200 baud. Hollywood's only remote computer for the show business and entertainment community. Free comprehensive databases, including hard-to-find products and services (US and Canada), television/motion picture production/post production services (worldwide), Los Angeles restaurant guide, remote access computers (worldwide), People In Entertainment and many more. CP/M, MS-DOS pd programs. 40 megabytes and growing. 7 days, 24 hours. Sysop: Norman H. Strassner.

**Bloom County "Nochange" BBS.** (213) 615-0528, 8-N-1, 24 hours, 7 days, 300/1200/2400 baud. Bloom County is an IBM BBS running Nochange software. This system features online games including Pyro Mountain, 200 Sector Traders, Empire, Original Adventure and more! There are over 30 megs of space devoted exclusively to the latest PD software and a great e-mail system too. Call the ultimate bulletin board today. Sysop: Brody Schiess.

**Find-A-Home.** BBS emphasis on locating roommates, tenants,

rentals, buyers and sellers for both residential and commercial properties. Also private mail and public forums including roommate discussions, dealing with landlords, foreclosures, real estate matters, investment opportunities, money matters, employment opportunities, current events, automotive, classified ads, humor, trivia. Operating on an XT clone with 20MB hard disk at 300/1200 baud. Online 24 hours. We're a new and free service. Call now! (213) 325-7269. Sysop: Ada Owen.

**99 BBS.** (213) 947-7777. 7 bits, even parity, full duplex, 300/1200 baud. For TI-99/4A computers. Operates 24 hours, 7 days. Downloads, uploads, multiple message boases and more. Sysop: Roger Davis.

**CompuCenter Long Beach.** (213) 421-1041. 8-N-1, 24 hours, 300/1200. Multi-interest board in Long Beach with everything from Aviation sub-board to Mature Topics and IBM, C64/128, and Amiga. Sysop: Ken Cothern.

**Intelligent Solutions BBS.** (213) 494-1243. IBM software and hardware tips. No registration, no rules, no restrictions to new users. Easy-to-use PC-Board system. Our user base consists of some of the most knowledgeable consultants and programmers in Southern California. 300/1200/2400 support vice, 8-N-1, 24 hours. Sysop: Thompson McDonald.

**The Talk Line.** (213) 938-9697. 3 message bases: general board with discussions on current subjects or anything anyone wants to debate, a sports board and a music / movies board. 6 pm-7am. 300 baud, 1 stop, 8 WL, no parity, full duplex. Sysop: Frodo.

**The Starship Sardonyx Net.** (213) 467-6667. 8-N-1, 300/1200, 24 hours. We offer extensive general files, online games, up and download subs, 8 message bases, e-mail. Large public domain section for Commodore users. Sysop: Zed Yago.

**LEGACY/The Law Network.** Free exchange of messages and information on Computer Law, Entertainment Law, and Communications Law, and forum for new ideas and directions in the practice of law and administration of justice. Features include e-mail, online law journal, standard legal forms and agreements, and a pro bono conference for free legal advice to non-lawyers. Operating 24 hours at 1200 baud, 8-N-1. Accessible using GTE's PC Pursuit. Call (213) 553-1473. Sysop: Robert H. Kohn, Esq.

**BBS-64 Shopper.** (213) 598-5841. 8-N-1, 24 hours, 300/1200 baud. Sysop: Scott D. Edson.

**Hollywood Midnight Express BBS.** (213) 465-0676. Apple board, all computer users welcome. Sub-board for amateur and professional writers, ul/dl of Apple II graphics created by users. 1200 Baud Only! Our BBS now automatically disconnects 300 baud callers. HME Sysop: Michael Thomas. Sub-board sysop: David Batterson

**K&L Tele-Catalog.** (213) 327-2255. 24 hours, 300/1200, 8-N-1. 27 sub-boards including electronic and computer shopping, general board, game boards, club boards, classifieds, tips and tricks. No fee. Sysops: Louis B. Dubin, John Altpeter.

**Atari Telecom.** (213) 494-7083. 24 hours, 300/1200 baud. Supports all Atari computers. 20+ megs online storage. 16+ SIGs for discussion. Online games, role-playing games, ATASCII graphics, large online info libraries, ul/dl. Standard parameters. New users needed! Sysop: Dr. Matrix.

**The Crest RBBS.** (213) 471-2518. Call for one of the best IBM RBBS around, running with the latest merge for RBBS-PC. Win free time weekly with secret password. Features include the latest e-mail, ul/dl, color/music online. Best of all it's FREE! Operating 24 hours a day at 2400/1200 baud. NO 300 BAUD ALLOWED! Sysop: Eric Newhouse.

**The Luv Connection.** (213) 663-6886. 300/1200/2400 baud, 8-N-1, 24 hours. Nine lines, private e-mail. Chat online with other users. 28 different boards to access in the Tack Room: The Perfect Matchmaker, Dating, Music/Video/Film, Sports, Robotics, Computer Stuff, Programmers Lounge, Handicapped (Physically Impaired), Sauna, Men's Locker Room, Powder Room, Take Aim. The largest library in SoCal for the latest demos and Public Domain programs for D/L. Luv Connection Network offers true nationwide networking. Prime sysops: Todd & Charlotte.

**LAAUG-LINE.** (213) 559-7367. 300/1200, 7 days a week, 24-hours. Sysop: Gary Woolard.

**Hollywood Commodore User Group Hug #1.** (213) 466-3049. 8-bit, no parity, 1 stop, 24-hours, 300-1200 baud, running on C-NET. Sysops: Joss A. Vazquez & Zed Yago.

**Alinco Ind. RBBS.** (213) 402-4716. 300/1200/2400 baud, N-8-1. Upload and download of public domain files. E-Mail, conferences: games, communication and technical references, systems and peripherals price list. This is a totally new board. Sysop: Albert Chang.

**Long Beach AIDS Information BBS.** (213) 663-2025. 24-hours, 300/1200 baud. Information on AIDS issues, especially experimental drug therapies. Also serves as a forum for discussion. Sysop: Ken Ragge.

**The Long Beach Bulletin Board.** (213) 438-6783. N-8-1, 24 hours, 300/1200/2400 baud. The Long Beach Bulletin Board has been in operation for over three years supporting 3000 plus users. We have over 60 megs online with over 1500 files for downloading. Special Interests Groups include AD for BBS notices and sale items, CD for all CAD/CAM applications, COMM for discussing communications topics, GAMES, MIDI and STARFLT. All SIGS are open to the public. Call one of Southern California's oldest RBBS systems in operation. Sysop: Forrest Litke.

**Landing Strip.** (213) 597-7773. 300/1200, 24 hours, WWIV software. A computer board service dedicated to aviation and online adventure games. Features aviation related downloads for IBM computers and has download areas for Apple and C-64. Unique online games that must be played to be fully appreciated. Sysop: One-Eight Charlie.

**Chat Line.** (213) 534-4311. 24 hours, 300/1200 baud. Multi-line, multi-user. Interactive chatting between online users. Downloads for all popular computers. Innovative and informative public message exchanges. E-mail. Sysop: Tony Broderick.

**Digital Diversions.** (213) 423-5797. 24 hours, 300/1200/2400 baud. Accessible through PC Pursuit. On-line 24. Fun and friendly. File transfers. Special interest groups. Give us a try! Sysop: Jeff Glassman.

**LA Sportsbook.** (213) 545-6528. 8 bit, 1 stop, No parity, 24 hours, 300 baud. For the sports and horse racing fan in Southern California. Talk sports and horses. We pick winners at better than 50%! Sysop: Rich Kopro a.k.a. The Sports Master.

**Melodyland BBS.** (213) 225-9279. 8-N-1, 24 hours, 300/1200 baud. Melodyland is a message only BBS with several conferences filled with stimulating discussion. Also features a "Friends of Bill W." area specifically created for members of Alcoholics Anonymous and other 12-step programs. The AA section features a local "e-meeting." Melodyland is a participating node in the Recovery National Network, a nationwide "echo" for members of the 12-step programs. Sysop: Melody

**(PG) Board.** (213) 836-6439. 24 hours, 7 days, 300/1200 baud, 8-N-1. Relationships, sexuality, money, morality, economics, politics, religion, art, music, literature, theatre, philosophy, the nature of the mind. If they mean a great deal to you, please give us a call. No uploading or downloading. Conversation only.

**CompuCenter/LA.** (213) 435-3757. 8-N-1, 24 hours, 300/1200 baud. Multi-user board including conferences for Amiga, IBM, C64, C128, TRS-80. Reviews on software and hardware. For Sale section and much more. Up/Downloads section for all listed. Sysop Rick Gaspa.

**Ump's Video/Communications BBS.** (213) 413-1146. 300/1200 baud. 4:00 pm to 2:00 am. Hundreds of video/movie titles waiting for you. If you're a serious videomaniac and absolutely must have your very own copy of "Porky's," "Dracula," or "Rocky IV," we've got all the titles you'll ever want. R, PG and G ratings. Drama, Horror Thrillers, Musicals, Sci-Fi, Comedy and Classics. To order, complete the order form in the order file or call us directly at our Los Angeles office. Also available to users is our Resume Transmittal Service. Input your resume onto our transmittal file. Each month we mail over 200 transmittal diskettes to companies looking for skilled people throughout Southern California (soon to be a nationwide service.) No fee for first time users. Sysop: Stephen R. McCormick.

**Gladiator's Den.** (213) 860-2221. 300/1200 baud, 8-N-1, 24 hours.

**Computer Quick, Inc.** (213) 941-3554. 300/1200 baud. Even, 7 data, 1 stop. BBS dedicated to repair, upgrade or information on computers only. Sysop: Sam Noonon.

**Spenser's BBS.** (213) 732-0109. 8-N-1. Sysop: Chris Spencer.

**Amiga Exchange.** (213) 325-1796. 300/1200 baud, 8-N-1, 24 hours. Downloads, uploads, e-mail, news, rumors, operating tips, hardware/software reviews, classified ad section. This is a new BBS. Sysop: R. Takahashi.

**The Westside.** (213) 933-4050. 300/1200/2400 baud, 8-N-1, 24 hours. Ten lines with private and group chat, e-mail, match, 30 public message and game boards, on-line library and electronic buyer's guide/database. Sysop: Dave.

**Star Wars Lovers Of America** (213) 867-7724. No modem. 9:00 am - 12:00 pm. Run by the Drive-way Group Ltd., User Group. Devoted to LucasFilms and Star Wars. Tracking of software, figures, data and more. If you have the SW collection, figures, any software that pertains to SW then call. We could buy, sell, trade, items. Information on new releases from George Lucas. We love Star Wars and George Lucas. If you do too, then call. Sysop: The Force.

## 305

**Miami PC Users Group BBS.** (305) 621-7534. 2400 baud, 24 hours. PC-Pursuitable. Sysops: Ken Burch and Bob Ash.

## 312

**Feminist BBS.** (312) 225-9138. 8-N-1, 24 hours, 300/1200 baud. Feminism, women's issues, general talk. Sysop: Susan B. Anthony.

## 408

**Atari Base BBS** (408) 745-5308 or (408) 745-2642. 300/1200 baud, any time, any day. The official BBS of Atari Corp, for all Atari computers.

**Byte Bandits ColossusNet.** (408) 374-3974, 300/1200, 24 hours. Network USA. Sysop Sam C. Brown.

**Bizcomp BBS.** Sunnyvale, CA (408) 720-9212, 300/1200, 24 hours. Message base specializing in modern technical help, with a special message conference for sysops. No file transfers available. No registration fee, but requires home & business phone numbers on first call.

**Non-Smokers BBS.** (408) 288-4277, 298-GASP, 8-N-1, RBBS PC, 24 hours per day, 300/1200 baud. Sysop: Ed O'Dwyer. Features non-smoking areas in restaurants and hotels, health info, diner's conference, messages, public domain software.

**Home Board** (408) 277-0106 no fee. A non-profit BBS focused on housing issues in Santa Clara

County. 1200 baud, 24 hours M-F (8 am Monday through 5 pm Friday). Sysop: Beth Wyman (408) 299-2566.

**Board III** (408) 985-7573. 300/1200 baud, 24 hrs., 8 bits, no parity. Board III is an ongoing experiment in telecommunications. Atari-based, but all computers welcome. Sysop: "The Chairman."

**ADV in Lrn** (408) 247-4769.

**The CATS BBS** (408) 356-8902. Computer Assisted Typography Service Typesetting BBS. On-line tutorial of PC typesetting, public message bases, 300 baud only.

**Sailors Refuge** (408) 262-3963. 300/1200/2400 baud, 8/N/1, 24 hours. SIGs for most computers, games and more. Unique software. Easy, user friendly. Fast validation. U/L-D/L for all SIGs. Sysop your own special SIG. Over two years of non-stop operation. E-mail system. Library text files. Sysop: Ron Pierce.

**Bulletin Board Hewlett-Packard BBS.** Features HP-current events and user information. 24 hrs., 300-1200 baud, 7 bits, odd parity, 1 stop. NO FEE. (408) 747-1243.

**The Man O'War,** (408) 243-2370. 24 Hours, 300/1200 baud. Over 52 message bases, organized activities. A member of the Silicon Valley Sysop's Exchange.

**Silicon Valley Sysop's Exchange.** Merlin's Castle BBS (300 baud only), (408) 578-1563. Sharks Head BBS (300/1200 baud), (408) 247-4810. The Man O'War (300/1200 baud), (408) 243-2370.

**SDI Clearinghouse BBS.** Morgan Hill, CA, (408) 778-3531, 300/1200 baud, 24 hours. Supports the L5 Society in promoting the development of space.

**The Shark's Head BBS** - Something for everyone, from serious to ridiculous. No-fee, membership system. We're not only user friendly, we're friendly users. Member SVSE. Dusty & Candy Van, (408) 247-4810.

**Bay Area Atari Users Group** 24 hour BBS. 300/1200, ATASCII or ASCII. Sysop Mark Bloemenkamp. (408) 249-7722.

**Digikron Systems (ZNode 25).** (408) 253-1309. ZRDOS/ZCPR3 Macintosh and Apple CP/M, 72 megabytes. 300/1200 baud, 8 bit, no parity, 24 hours/7 days. Sysop: Douglas Thom.

**Hotel California.** (408) 942-1081. 24 hrs., 300 baud, Commodore oriented.

**The Flying Fido.** Fido network 143, node 23, is now up and running 24 hours per day, except during FidoMail. 300/1200 baud, (408) 946-3183. Special interest in aviation; ul/dl of pd software. Free.

**Association of Apple 32 Users BBS.** (408) 263-0299. 24 hrs., 300/1200. Sysop: John Griffith.

**Sofia System.** (408) 244-5055. 300 baud, 24 hours, BBS protocol. Conversations and e-mail. Ten lines of multi-user interaction. Networked nationally. Sysop: S.W. Heissain.

**Matchmaker Sam Jose.** (408) 249-4566, 300/1200 baud, 24 hours, 7 days, 3 lines. Matchmaker Sam Jose is the ultimate matchmaking/dating system for personal computer users. Nationally networked. Call now and see the future of personal communications. Type "mm" at login. Sysop: The Matchmaker.

**Dragon Flight.** (408) 353-3703, 24 hours, 300/1200 baud. "The Social System." Over 15 theme oriented message bases. On-line quizzes. New remotes wanted! No fee. All ages and computer types welcomed! Sysop: Bronze Tooth.

**Vietnam Vets-The LooneyBin.** Nancy and Todd Looney, sysops. Dedicated to 'Nam vets, their wives, lovers, and friends. Good friendly conversation plus referrals and counseling. Online 23 hours 3/12/2400. (408) 293-7894. FidoNet #143/27.

**Public Domain Software Special Interest Group (PDS-SIG) BBS.** San Jose, CA. (408) 270-4085/4086, 8-N-1, 1200/2400



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**Tele-Play.** (408) 723-9003. 24 hrs, 300 baud, program matches parameters. Sysop: "Titan."

**Consumers BBS and Insurance Center, Sunnyvale.** (408) 732-4126, 300/1200 baud, 8-N-1, 24 hours. Rate your own home and auto insurance with one of the nation's top 5 insurance companies. Apply for a car loan with Lloyd's Bank. Get the Dealer's cost on new cars. See if your auto has been recalled. Buy or sell a car. Free, no passwords, no time limits. Sysop: Al Moskal.

**Phoenix Info.** Sports betting, football, horse racing — Bay Meadows, Golden Gate Fields. Lotto and stocks coming later. Starting weekends while increasing days as interest grows. One ring and call back to get on. (408) 270-2661. Sysop: Jim Finnell.

**The Wounded Land.** (408) 736-6490. Active fantasy role playing games. 24 hours, 300 baud. Sysop: The Spirit.

**Bay Area Bulletin Board.** (408) 723-7238. 24 hours, world wide net mail, 66 megs of online programs for download, adult message area, several special interest areas. 8-N-1, 300/1200/2400 baud. Sysop: Jim Acker.

**DYM #296.** (408) 720-0724, 300 baud, 8-N-1. A BBS focused on personal e-mail and friendly exchanges of information. Features user match function and e-mail. five sub-boards including Public, Current Topics, User Activities, and two Adults Only sections. No fees required, but online registration/verification is required. Sysop: Operator 161.

**Computer Tyme.** (408) 732-2353. 300/1200/2400 baud, 24 hours. We have conferences dedicated to mass transit topics and also support for compatibles. Sysops: Gary Araki and Eric Rosenberg.

**Gino's.** (408) 371-2703. 300/1200, Commodore UL and DL. Sysop: Porkchop.

**The PET Sematary.** (408) 263-3486. Commodore specific, X-Modem, Punter files, XSee. 300/1200 baud, 8-N-1, weekdays 5 pm-10 pm, weekends 10 am-10 pm. Sysop: Grave Robber.

**Enable BBS.** (408) 998-8927. 300/1200, 24 hours. We're here to provide support for your computer. IBM based, but all users welcome. Also featuring "Dear Enable," the alternative to suicide. Sysops: Rob Ehlers, Tim Duncan.

**DYM #56.** (408) 736-7356. 8-N-1, 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adult Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

**INTEREX User BBS.** (408) 746-0834. 8-N-1, 24 hours, 300/450/1200 baud. Designed to accommodate INTEREX affiliated users, along with all other users of HP computers. There are sections for HP 3000, HP 1000, HP 9000 and HP Series 100 computers, including the Vectra. One important topic is intended for users to pass along their comments/sug-

gestions/requests of HP lab folks, to INTEREX, for delivery to HP, helping affect the course of new products and enhancements from HP. Sysop: Jack McAlister.

**Comp-U-Ease BBS.** (408) 286-8332. 300/1200/2400 baud, 24 hours, 8-N-1. IBM and Atari ST oriented. No fee, dBASE SIG, lots of downloads. PC Board utilities. Sysops: Stuart Smith and Eric Smith.

**Professional Software Programmers Association.** 830 Bay Avenue, Suite G, Dept. F, Capitola, CA 95010. A 24 hour service and support bulletin board for computer professionals. (408) 462-2829. 8 bit, no parity, 300/1200/2400 baud. No fees. Product reviews, professional job registry and consulting registry services. Ask for copy of the Association's free monthly newsletter and membership information packet.

**The Dynamic BBS.** (408) 972-9750, San Jose, 22 hours, 7 days, maintenance 5-7 pm daily. Registration required. Features: contests and prizes, 100 meg of d/loadable files and more. Coming attractions; multi-lines, on-line programs and games, multi conference areas. 1200/2400 baud, with limited access to 300 baud users. Sysops: Terry & Sharon, The Dynamic Duo.

**The Portal System™.** (408) 725-0561, 300/1200/2400 baud, 8-N-1, 24 hrs. Features USENET Int'l. Net w/250+ conferences including IBM, Apple, Mac, Atari, CP/M, Unix, social topics, cars, cooking and gardening. UUUC, BITNET mail access. Live chat shows every night. Say you saw it in *MicroTimes*!

**ST-Hotline BBS.** (408) 374-5739, 24-hours, 7 days, 300/2400 baud, Atari ST only, newest public domain software, news and message base, 20-meg hard disk.

**Perigrine Data Systems BBS.** (408) 997-6254, 24-hour, 1200/2400 baud, PC board. PC based BBS, no fee. Features PC public domain software for DOS utilities, games, C and Assembler source, business and printer utilities. Conferences dedicated to DOS, communications, UNIX and PerLine technical support. Sysop: Einar Pedersen.

**The Campbell BBS.** (408) 379-4830. 3-2400 BPS, No Parity, 1 stop bit, 3/12/2400, N-8-1, 24-hours. No registration required, immediate access, MS-DOS-others, includes support for "Bob's Term-Pro" terminal software. Sysop: E. Munson.

**National Computer Club BBS.** (408) 866-2670. 300/1200 baud, 8-N-1, 24-hours, 7 days a week. IBM and Apple II software, shopper service, 2 conference lines: general and adult BBS listings, UL/DL. Membership required for major functions. Sysop: Michael McCake.

**Timex/Sinclair Users Of Silicon Valley BBS.** (408) 735-7390. Public Domain Software Exchange. 300/1200 baud, 8-N-1, 24-hours, 32 lines. No waiting!

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**San Jose Access System.** (408) 448-1637. 24 hours, 8-N-1, 300 baud. 300/1200/2400 as of Aug. '87. One of the most accessible systems in Northern California. Six hours per user call! Atari based, but all systems welcome. Sysop: Greg Argendeli, a.k.a. The Doctor.

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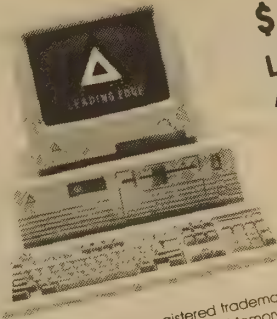
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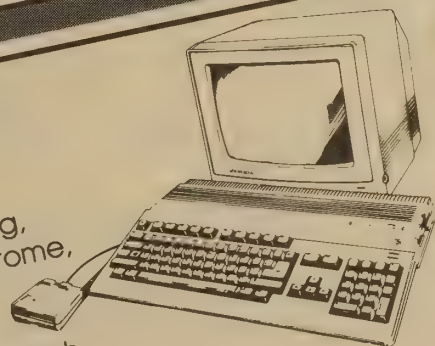
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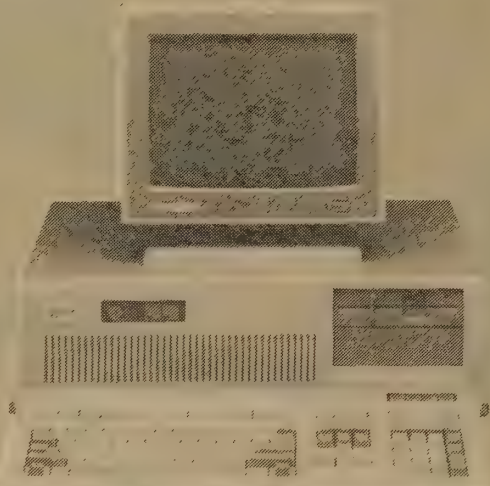
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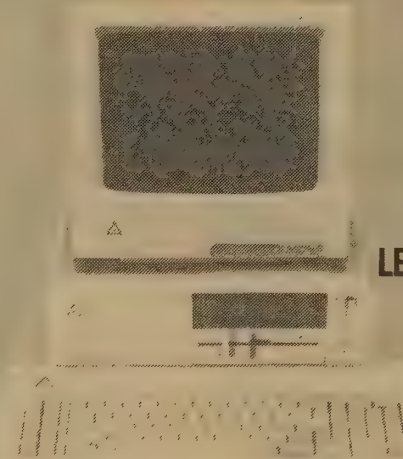
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**Recovery BBS.** (415) 621-5206. FidoNet Nodes 125/9 and 125/31. If you are in a 12 step recovery program, or think you have a problem with alcohol or drugs, or if you are compulsive about eating, smoking, or sex and love, call. Share your experience, strength and hope in message sections that include AA, NA, CA, OA, SA, SLAA and Alanon/CA. There are meeting listings in the file areas.

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**Centerville RBBS.** (415) 793-3037. 300/1200/2400 baud, E-7-1 or N-8-1, 24 hours daily. Sysop: Joe Halbleib.

**The Board.** (415) 652-8277. 1200/2400 baud, 8-N-1, 24 hours. Public and private conferences, technical support. For AT&T and compatibles; AT&T PC support conferences. Associated with Bay Area AT&T PC6300 Users' Group. Sysop: Troy Blackburn.

**Attitude Adjustment.** (415) 939-1639. 8-N-1, 24 hours, 7 days, 300 baud. Call today and get your Attitude adjusted... just for fun. If you have an Attitude and want to tell people about it, you know where to call. Small but growing system: 8 message bases, private e-mail, voting, textfiles and a few downloads. Emphasis is on interaction between Adjusters on the message bases. Sysop: Rick Adjuster.

**Dial-Your-Match #341 in Hayward.** (415) 489-2572. 24 hours, 7 days, 300/1200 baud, no charge. Sysop: The Matchmaker.

**Yet Another BBS.** (415) 689-8952. 8-N-1, 300/1200, 24 hours, 7 days. Upload/download, entire public domain library of "The Ultimate Source." All makes of software, message base, e-mail. Friendly sysops! Jim and Alex Stewart.

**Track 3 BBS.** (415) 752-6172. 300/1200/2400 baud, 24 hours, 7 days, San Francisco. For railfans, roller coaster enthusiasts, model enthusiasts and the like. Fido 161/201. Sysop: Robert Parks.

**Infolinc RBBS.** (415) 672-9270. 8-N-1, 300/1200/2400 baud, over 500 files online, conferences, doors, online chat with other users. Special private line for supporting users, running PC Board 11/6/E, 24 hrs. Sysop: John Palmer.

**DYM #56.** (415) 964-3255. 8-N-1. 24 hours, 300 baud. Features user match function and e-mail, five message boards including Public, User Activities, The Flea Market (Buy/Sell/Trade) and two Adults Only boards. No fee required, but online registration is required. Sysop: Velvet 150.

**Palladin BBS.** (415) 332-1655. 1200 baud, 8-N-1, 7 days, 24 hours. Sysop: Al Kalian.

**The DeskTop Publisher.** (415) 856-2771. 300/1200/2400 baud, 24 hours, 7 days. Dedicated to desktop publishing, with particular emphasis on the use of DOS based hardware and software. Upload/download/messages/conferences. Anyone interested welcome. No fee. Registration required for full participation. Sysop: Freeman Bradford.

**The Nimitz DownPort.** (415) 276-3677. 8-N-1, 24 hours, 7 days, 300/1200 baud. Commodore only board. The Nimitz DownPort offers a wide variety of message bases including Adult. With a BBS that has parties, educational offerings, discussions with nationally- and locally-known "geniuses" and experts, and "hands-on" role-playing games, there is no reason not to dock here. Call today and be a part of tomorrow. Sysops: Lady Godiva and Portmaster Kevin Munrow.

**Marin-Sonoma PC Users Group BBS.** (415) 927-1216. 300/1200 baud, 8-N-1. Sysop: Howard Leistner.

**California ConneXion Party-line.** (415) 927-2739. 8-N-1, 300/1200/2400, 24 hours. Member of BayOps. An adult oriented multi-user, multi-interest system featuring matchmaking, 20+ public message boards, on-line chat with other users, questionnaires upload/download library, pictures, private E-Mail and more! Extremely fast system running on an IBM/AT at 9.5 mhz with 70 megs of storage and 9 lines on a rotary. Registration required! Sysop: Alan.

**Impeesa's Path.** (415) 582-4863. 1200/2400, 8-N-1, 24 hours. Focused on outdoor activities. Conferences on camping, hiking, fishing and hunting, photography, Boy Scout activities. Also features "Doors," supports graphics. Sysop: Ed Reardon.

**The Wizard Net.** (415) 481-8413. San Leandro; (415) 232-6981. San Pablo. Full duplex, 1 stop bit, no parity, 6 am-6pm M-F, 24 hours weekends, 300/1200 baud. A user friendly system that utilizes Commodore color graphics. The more time that you put into the system the more you will be able to get out of it. System has bulletin boards, e-mail, voting booth, a chat feature, ul/dl, and online games. There are no fees, and everyone is welcome. Registration required. Sysops: Dave Rasmussen, Keith Parrish, Olivia Parrish.

**AI-NET.** Public OPUS board with 20 MB of files. Echo newsgroups for dBASE, Technical Forum, Mainframe Forum, Software Evaluation, Buy/Sell, National Mail, and more. Available between 3 am and 11:30 pm daily. 300/1200 settings: 8-N-1. 125/125 in the Matrix. (415) 776-6628.

**SFPCjr UG BBS.** (415) 997-4874. Sponsored by the SF PCjr User Group. 1200 baud, 8-N-1, 24 hours. Sysop: Larry Buonocristiani.

**RSVP BBS.** (415) 659-9169, 24 hours. Japan mail exchange, Doctor Who, Ohlone Forum, Amiga Music-net and Tech-net. IBM/Amiga/Atari files. Always something new! Sysop: Jim Thomas.

**tsunami bbs.** (415) RAM-2-RAM. Graphics specialty board for most microcomputers. Supports wide interchange of graphics files between "incompatible" systems. U/L's and D/L's for graphics programs and picture files. Collects and distributes p-d graphic format conversion programs, as well as picture files in Microillustrator-compatible, IFF and CocoMax formats. 300/1200 baud, 8-N-1, 24 hours.

**Trading Post BBS.** Information Exchange system, (415) 948-4163. Open system with more than 20 discussion groups covering everything from Atari to ZCPR3. Online games and 200+ articles. Free. Sysop: Lars Rosengreen, a.k.a. Eskimo.

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**Production World On-Line.** (415) 571-6160, 300/1200/2400 baud, 24-hours. An additional service from Production World On-Paper, a printed publication for the motion picture film, broadcast television, video and audio communities featuring Northern California people and facilities. A variety of information and message bases available. Sysop: Wes Dorman.

**Amiga Addicts Anonymous BBS.** (415) 283-5469 "BUD-LINX." 24-hours, Xmodem, 300/1200 baud, N/8-1. Sysop: Randy Spencer.

**Aardwolf Express Family Forum.** (415) 651-4147. 24 hours a day, 7 days a week, 300/1200/2400 baud. Located in Fremont CA. System offers: Informet, an electronic computer magazine; Showcase, shareware and demonstration programs download; complete King James Version of Bible online; Discovery (Christianity); Friends (user profiles and interests) and user opinion polls. Sysop: Veit Anton Johnson.

**The Guardian.** (415) 644-6806. The Berkeley Police Department's public relations and community service bulletin board. Lists crime prevention information including neighborhood and business watches, crime statistics and recent press releases. Community organizations are encouraged to call and post events. Everyone invited, you need not be a Berkeley citizen. 24-hours, 7 days a week, 300/1200 baud. Sysop: Officer Carl Orsi.

**Commodore Connection BBS.** (415) 458-1005. 1 stop bit, no parity, 7 or 8 bit word, 300/1200 baud, 24-hours. Sysop: Clint Beers.

**AsKKey XPress BBS.** (415) 657-1728. AE Line, 300/1200 baud, 8-N-1, 24 hours, 20 meg system, private E-Mail, several sub-boards, online games. Apple II downloads. No Fee.

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**Horseracing BBS.** (415) 941-1931. 24 hours, 300/1200 baud, 8-N-1, FIDO.BBS Files open to all. For gamblers, horseplayers, statisticians. Everyone welcome. Using dBASE 3 file structure. All files checked before downloading. Co-op racing database. Free.

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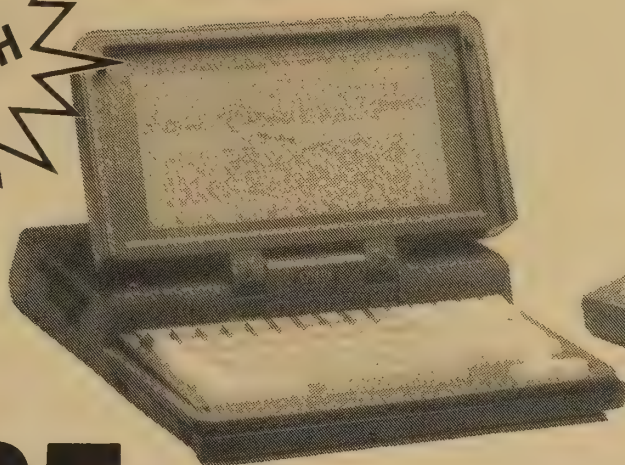


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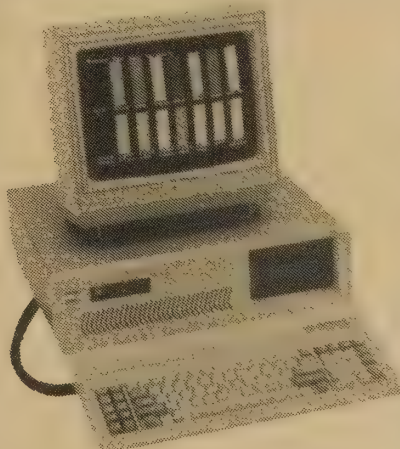
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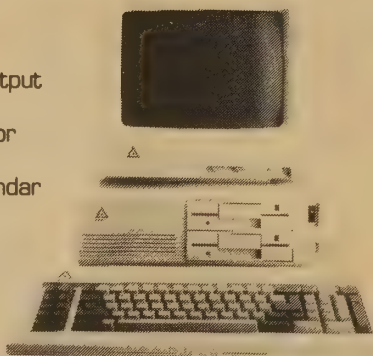
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**Sysware BBS.** 24 hours, 300/1200 baud, (619) 278-8661. Commodore machines only. Sysop: Don Malette.

**The Nassau XPress.** (619) 433-XPBS. 8-N-1, 300 baud, 24 hours. An information and entertainment BBS with 11 message bases including electronics, amateur radio, computer news, music, adventure games, BBS review. Full access is granted to long distance callers with same day validation for new users. UL/DL available using XModem or Punter. Private e-mail, text files, online games and utilities. Sysop: Dan Wright.

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## 702

**Public Domain Software Interest Group.** (702) 794-3665. 24 hours, 300/1200/2400 baud, 8-N-1. Public domain software available for downloading, message board, and user supported donations of software. Sysop: T. Heisserman.

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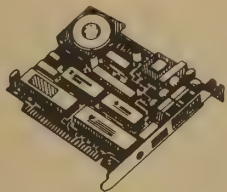
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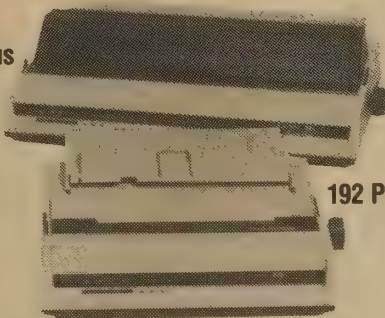
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**The WOCUG Board.** Operated by West Orange County Commodore User Group. EBBS, 8-N-1, 24 hrs, 300/1200. (714) 772-4182. Sysop: Mark Stanford.

**The Buckeye BBS.** (714) 821-0589. C64, Punter, Xmodem, 300/1200 baud, 24 hours. Sysop: Art Collins.

**FBBS.** (714) 823-3673. 24 hrs., 300/1200 baud, full duplex. 50 megabyte system based in Fontana. Downloads for Commodore, Amiga, IBM, Atari, Apple, CP/M. 17 active message bases, weekly online magazine. Sysop: Larry Krzewinski.

**GameNet.** (714) 520-4263, 24 hours, 300 baud, multiuser board. This Orange County based system features interactive games, a chat area, and an online mail section. Sysop: Merlin or Patches.

**Bits and Pieces Times BPT-MAIN.** (714) 630-5619. 300/1200/2400, No parity, full duplex. BBS determines results by return key. You must press return key to get on. Guardian-Fidonet/125. Large C64, 128, Amiga and IBM library. Sub board 4: Commodore Club. Sub board 5: IBM. 8:00 pm-9:00am, M-F BBS runs continuously from 8:00 pm Friday to 9:00 am Monday. Sysop: Mike Dalton; Sub: John Callaci.

**Software Exchange.** (714) 552-3515. 300/1200/2400, 24 hours, 7 days, 8-N-1. Specializing in public domain and shareware for IBM and compatibles. Over 2000 programs in 122 megabytes on line. Features include private and public message bases, conferences and online help and menu screens. Beta Tester for "Wildcat," the next generation of BBS software. Sysop: John Coon.

**C-TUG BBS.** (714) 458-1288. Punter protocol, 24 hours, 300/1200 baud. Sysop: Les Gertz.

**77-Amiga.** (714) 77-AMIGA. 300/1200 baud, 24 hours, 40 meg. drive. Sysop: Al Cheser.

**French Connection.** (714) 858-8111. 300/1200/2400/9600 baud. Ten multi-line BBS in Orange County. Dating service, 500 megs of software for users. Sysop: Stephan M. Cohen.

**The Pleasure Connection.** (714) 773-5326. DYM 502 Buena Park CA. 300/1200 Baud, 24 hours. Computer dating, open forums, adult boards, etc. Sysop: Russ.

**Tripwire Wildcat.** (714) 964-1146. 8-N-1, 300/1200/2400 baud, 24 hours. New BBS. Tripwire BBS is providing both public and private telecommunications to users on a WILDCAT BBS system. The latest in PD software is provided in nineteen different file sections. After 75 days of operations the board is providing over 750 files to users and continues to grow daily through active support. Sysop: William Kidd.

**Nebula 6 BBS.** (714) 595-4020. 300/1200 baud, 20 megs. Online full of download material for Apple, IBM, Atari, Tandy and Amiga. There is a vast amount of space for Commodore files. The message bases, text files and online games are extremely popular. Monthly giveaways take place dealing with game winners of trivia, etc. If you would like info on the system write to: Nebula 6 BBS, P.O. Box 1071, Walnut Creek, CA 91788. Call now and join the fun. Commodore based. Sysops: Ultimacy & Dr. Foxe.

**F&W Guns.** (714) 653-0494. 300/1200. 8-N-1. Sysop: Louis Ringe.

**The Circuit Board.** (714) 778-0948. 300/1200/2400, 8-N-1, 24 hours. IBM-PC software. 106 MB disk space. Sysop: Dave Kleinschmidt.

**The Amiga Inn.** (714) 283-3202. 1200 baud, 8-N-1, 24 hours, 7 days. The Amiga Inn is dedicated to the full line of Amigas: 500s, 1000s and 2000s. Reviews, games, help, etc. All use is free. Please visit the Inn. Innkeeper: Steve Snyder.

**1139/South.** (714) 545-1706. 300/1200/2400 baud, 8-N-1, 24 hours. Located in Costa Mesa. Sports conferences and file area. Five doors. Sysop: KC.

**717**  
**The Dead Board** (717) 677-9573, 24 hrs., 8 bit word, 1 stop bit, no parity, 300/1200 baud. Grateful Dead tape trading and info; space for bulletins, ads and public mail.

**805**

**Thousand Oaks Technical** (805) 493-1495. This massive 64 megabyte board has a mind-boggling number of downloadable programs. The board has no bulletin board feature and allows unlimited upload time. Download time is limited depending on upload exchange.

**KERNCOM.** (805) 322-8800. 300/1200/2400 baud, 24 hours, 7 days. KERNCOM has operated continuously since March 1983 for the IBM community. KERNCOM is owned by the Kern Independent PC Users Group and is never off line except for routine maintenance. Sysops: Rick Heming and Jim Harrer.

**CCCUG BBS.** Central Coast Commodore Users Group. (805) 934-2216. 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads. Sysop: Greg Johnson.

**PC Vision.** (805) 487-3149. 300/1200, 8-N-1, 40 megs. PC-, MS-DOS programs. Sysop: Frank Driscoll.

**Tech-Talk.** (805) 922-5488. 300/2400 baud, 24 hrs. 21 meg pd software on a 63 meg system. Online registration, instant access to all files, MS/PC-DOS, CP/M. Sysop: Jerry D. Russell. Public access "Collie ver. 1.2."

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**Success BBS.** (805) 238-7359. 300 baud, 24 hours. Commodore user group. Sysop: Larry Sarver.

**813**  
**Blithe Manor.** (813) 839-0734. 1200 baud, 8-N-1, 24 hours. Multi line. Adult dating. Sysop: Bill Rucker.

**818**  
**Granada Engineering Group RCP/M** (818) 360-5053. Technical information, BBS lists, and help on CP/M assembly language program writing.

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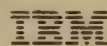
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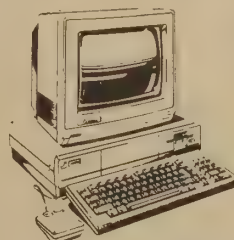
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## NATIONAL/ INTERNATIONAL

**Network Users Association.** 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

**TPUG World's largest Commodore Users Group.** \$25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modern System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

**Apple Co-op.** 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

**JUG (Jefferson State Computer Users Group).** Many SIGs, newsletter. Dues \$5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

**MicroPro Users Group of America.** National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

**Golden Apple Club,** Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

**FOG.** 15,000 member group supporting all CP/M users. Dues of \$24.00/yr. include 60-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

**Getec s.r.l.** Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

**Italtel S.p.a.** Contact Michelangelo Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

**KAPPA (Memphis Kaypro Users Group).** Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

**The AppleWorks Users Group (TAWUG).** c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

**FORTH Interest Group, International Office.** P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

**Apricot User Group (APRICUG).** Box 98, Malverne, NY 11565.

**Spellbinder Users' Group** has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

**National TeleVideo Users Group.** Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

**Apple Fontrix Club.** Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

**N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer Users.** The purpose of this group is to gather information that will assist the blind or visually impaired person in util-

izing the enormous potential of computers. It supports **Compu-Help**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Computhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

**28 Barbary Lane.** Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

**MICROenvironment: Micro-environmental Information Consortium For Researchers Overseas.** World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, U.S.A. Washington phone: (206) 262-0159. California phone: (415) 524-9309. Micro on MCI mail, ECOMET & WELL TELEX number 6502928733 via WUI.

**American Computer Users Temporality in Europe (A.C.U.T.E.).** Going overseas or already there? We are a users group dedicated to helping you better adjust and understand how to survive in the overseas environment with your computer system. We show you how to find things you will need at reduced member prices. We also consult firms and developers on how to make software more acceptable to the international market. We do foreign language translation of computer software and provide referral services. Further information available by mail: A.C.U.T.E., Postfach 4, D-8818 Lehrberg, West Germany.

**Folklife Terminal Club.** Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of \$15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

**Miami PC User Group.** Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

## ASSOCIATIONS

**Community Entrepreneurs Organization (CEO).** Business networking group meets in nine chapters around the Bay Area. Share information on tech and non-tech business issues. Topics, brainstorming and a chance to meet others in business. Various week nights. Contact Dr. Crandall, P.O. Box 2781, San Rafael CA 94912, (415) 435-4461. Also new Bulletin Board, (415) 552-9070.

**IEEE Computer Societies Committee on Artificial Intelligence and Expert Systems** sponsors an open meeting the third Thursday of every month, 7-10 pm, at Foothill College. For more information please call the IEEE council office at (415) 327-6622.

**Computer Professionals For Social Responsibility.** P.O. Box 717, Palo Alto, CA 94301. (415) 322-3778.

**Computer Professionals For Social Responsibility (East Bay).** 902 Rose Ave., Piedmont,

CA 94611. Contact Bruce Joffe, (415) 768-0288 days, (415) 654-5263 eves.

**FOCUS-MED (Federation of Computer Users in Medicine).** Open to all physicians and health professionals. Practice management consultant registry. (415) 626-4600.

**FOCUS-DDS (Federation of Computer Users in Dentistry).** Open to all dentists and dental professionals. Practice management consultant registry. (415) 626-4600.

**ITRA Independent Technical Representative Association** is an organization dedicated to helping people better understand the Personal Computer (IBM). Contact Tim Jones, 870 Market St. 609, San Francisco, CA 94102, (415) 421-4872 for meeting time and date.

**MCTUG (formerly Marin County TRS-80 Users' Group).** MS-DOS, CP/M and Tandy users group. Meets 7:30 pm on the first Monday of the month at the Larkspur Masonic Lodge, 1122 Magnolia Ave., Larkspur. Contact Dr. Frank Hovell, 907 Sprucewood Court, Petaluma, CA 94952, (707) 762-5740.

**PRACSA (Public Remote Access Computer Standards Association)** offers to clubs, schools, and user groups a Speakers Bureau. The purpose of the bureau is to act as a resource to these groups in obtaining speakers of high quality for their meetings. The volunteer speaker is provided free to the group. Contact (408) 262-5150. Meetings 4th Wednesday, 7 pm, Vadic Cafeteria, 222 Caspian Dr., Sunnyvale.

**San Bruno Computer Core.** Meets 7:30 pm alternate Wednesdays. Call (415) 952-9309 for address and info.

**San Francisco Computer Society** (Formerly the San Francisco First Osborne Group). A society for users of portable computers and/or the CP/M operating system. P.O. Box 783, San Francisco, CA 94101-0783. Meetings on fourth Thursday of the month, St. Aidan's Church, Diamond Heights and Goldmine Dr. in SF. All are invited. Dues \$10/yr.

**Software Entrepreneurs' Forum,** PO Box 61031, Palo Alto, CA 94306. (415) 854-7219.

**PATCA** (Professional & Technical Consultants Association). 1330 S. Bascom Ave., Suite D, San Jose, CA 95128. (408) 287-8703.

**BAYMUG. Bay Area Micro-Processor User Group.** General computer group, mostly CP/M and S100. All types of interests welcome. Celebrating our 10th year of meetings! Meetings 1441 Rolins Rd., Burlingame, CA, 1st Thursday, 7:30 p.m. Contact Victor K. Bailey, P.O. Box 248, Pleasanton, CA. 94566. (415) 462-4442.

**Byte Hum.** A user group for computer buffs concerned with human needs, or social activists who want to learn about computers. Let's put all that knowledge to work for social transformation! Sponsored by the Humanist Party. Contact Rick Wall, (415) 495-6555 or (415) 337-2530.

**Society for Technical Communication.** STC is a professional organization dedicated to furthering the art of technical communication. The San Francisco chapter has about 200 members. Writers, artists and others interested in technical communications are welcome. Meetings 3rd Wednesday of every month, 5:30-8:00 pm; call Sarah Collings, (415) 383-9631 for info or write to P.O. Box 2706, San Francisco, CA 94126.

**North Bay Users Group (NBUG).** Family computer club devoted to all aspects of computing. Monthly newsletter, library, software demos, etc. Meetings at "CAVE" school, 2nd Tuesday of the month, 7:30-10 pm. Contact Gloria Hutchinson, P.O. Box 7116, Vallejo, CA 94590, or call (707) 644-9327.

**Robotics Society of America.** Dedicated to disseminating in-

formation about robotics, artificial intelligence and machine controls. Mailing address 36 Newell St., San Francisco, CA 94133, (415) 673-2376. San Francisco chapter meets 2nd Monday of the month, 8 pm, Homestead Savings 5757 Geary Blvd. Contact Jim Strope, (415) 552-6564.

**Silicon Valley Computer Society.** Meetings 7:30 pm, second Wednesday of the month, Duane and Britton SE corner, Sunnyvale. Contact Dick Verna, (408) 262-2679 for information.

**PicoNet.** A microcomputer users group. Meets on the second Thursday of each month at 7:30 pm at CMX Corp., 2230 Martin Ave., Santa Clara, CA. Formerly specialized in CP/M software, but has broadened its scope to encompass the entire field of computer-related high technology. Extensive library of CP/M pd software; preparing PC-DOS library. Monthly meetings, periodic newsletter, BBS, C language SIG. Call (408) 374-8090 for recorded message on next meeting's topic.

**MicroPsy.** Users group devoted to the application of microcomputers in the psychological fields. Meetings first Saturday of the month, noon. Call for information: Martin Schaaf, M.S., (415) 454-6761.

**C Group of Northern California.** Forming C programmer support group. Group's function will be to exchange information, discuss programming techniques and problems, etc. Anticipate monthly meetings at rotating locations. First meeting to be held 7:30 pm, Tuesday evening, November 4th, in Mill Valley. Call (415) 383-7006, or contact Ben T. Choate III, P.O. Box 1533, Mill Valley, CA 94942.

**BADGE-Bay Area Developers Group.** Meets third Thursday of every month, 7:30 pm, at Stanford University Building 200, Room 002. Contact Tom Rokicki or Bob Alverson, (415) 326-5312 for information.

**California Genealogical Society Computer Interest Group.** Meets second Saturday of the month, 300 Brannan St., 4th Floor, San Francisco. Call Bill West (415) 235-6107 for information.

**Hebrew Users Group.** Supporting the use of Hebrew and Hebrew-based languages on computers. Contact Jack Love, (415) 845-7793 (Berkeley Hillel).

**Gay/Lesbian PC Users Group.** We meet on the second Sunday of each month. This is the group where we show our hardware and software and share our knowledge. All levels of users are welcome. Meeting place is the MCC San Francisco, 150 Eureka Street. For more info, contact Jim at P.O. Box 42429, San Francisco, CA 94101, (415) 334-9761.

**ComputerRooters.** ComputerRooters' purpose is to foster the science of genealogy through educational and research programs. Among other things we show how you can use your computer to further genealogical research. Our library of computer diskettes ranges from useful public utility programs to shareware genealogy programs and is constantly being expanded. Contact Maxine Roberts at P.O. Box 161693, Sacramento, CA 95816. BBS: (916) 685-8690 (Dynasty BBS). 300/1200/2400 baud, 8-N-1, 24 hours.

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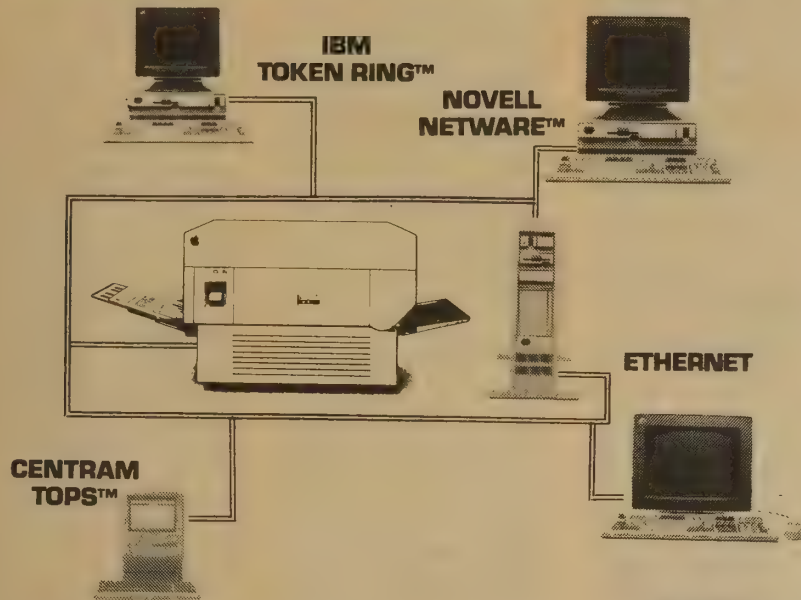
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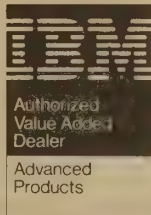
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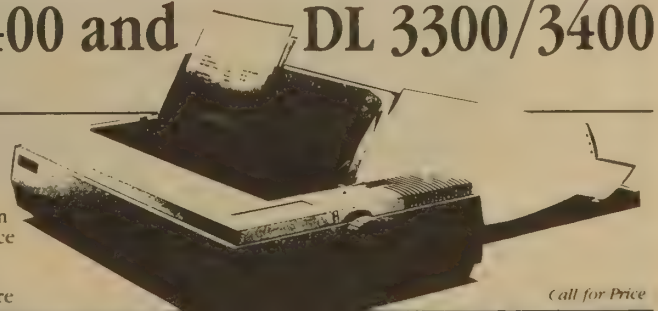
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**International Interactive Communications Society (IICS).** San Francisco Bay Area Chapter meets the second Tuesday of each month. Meetings alternate between San Francisco and Mountain View. National Office: 2120 Steiner St. San Francisco, CA 94115. (415) 922-0214. San Francisco Bay Area Chapter: P.O. Box 1372, San Carlos, CA 94070. Hot Line: (415) 328-7318.

**Bay Area Automated Mapping Assoc. (BAAMA).** An association of vendors, users, consultants and students who are interested in computerized mapping and database management. Meetings occur on odd numbered months at various locations throughout the great bay area. P.O. Box 1427, Mill Valley, CA 94942. Contact Jake Armstrong, 1195 Third Street, Room 125, Napa, CA 94558. (707) 253-4351.

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## USER GROUPS

### APL

**APLBUG (APL Bay Area Users' Group)** has monthly meetings and a newsletter for people interested in APL (A Programming Language). It meets the third Monday of each month at 7:30 pm in the offices of I.P. Sharp Associates, 220 California Avenue, Palo Alto. Annual dues are \$15. Contact Curtis Jones, (408) 292-4060, for information.

### AT&T

**Bay Area AT&T PC6300 Users' Group.** Demos, technical help and more. Meeting time and location vary. Contact Joe Mahoney (415) 586-8376 or Maurice Aranda, (415) 972-5436.

### ACTRIX

**ACTRIX Computer Enthusiast Society.** Membership (\$20/yr) provides public domain software, group rates, discounts for owners of Actrix/Access Matrix microcomputers. Meetings at Sunnyvale Community Center, last Wednesday of the month, 7 pm. Contact K. Edward Lynch, 1405 Phelps Ave. #29, San Jose 95117, (408) 756-5104, for more information.

### ADAM

**Coleco Adam Users Group.** For info send SASE to: CAUG, 2316 Stuart St., Berkeley, CA 94705. Voice (415) 549-3437, data (415) 549-3378.

**South Bay ADAM Users' Group.** Now forming a users' group exclusively for the ADAM enthusiast in the south bay area. Call Steve for more info at (408) 253-4190.

**East Bay ADAM Group.** Forming an ADAM users group in the East Bay area. Call Tom for more information — (415) 886-2884, or write 6097 Slopeview Ct., Castro Valley, CA 94552.

### AMIGA

**First Amiga User Group.** We offer demonstrations of software and hardware, a public domain library, and general user help at our monthly meetings, which are held on the first Tuesday of each month in Belmont, CA. Meeting address:

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Oakland, CA 94609

1300 Fifth Ave., Belmont, CA, 94070, 7 pm, first Tuesday of the month. Contact Tim Avery/Kayvan Pejoo, (415) 595-5452.

**First Amiga User Group the South Bay.** End-users, enthusiasts, developers and programmers all welcome. Meetings 2nd Fridays, library, 40 N. Milpitas Blvd., Milpitas, 7-9 pm. Contact Jim Thomas, P.O. 1863, Fremont, CA 94538, (415) 651-0201. BBS (415) 659-9169.

**ACCESS.** The Amiga and Commodore Computer Enthusiast Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

**Sacramento Amiga Computer Club (SACC).** Meets the second Wednesday of each month at the Sacramento Municipal Utility District (SMUD) auditorium, 6201 S. St. just off Hwy 50 at the 59th or 65th St. exit, 7 pm. For more information call George Leone, president, at (916) 944-7400 or write to SACC, P.O. Box 19784, Sacramento CA 95819-0784.

**Amiga East Bay Info Exchange (AEBIE).** P.O. Box 485, Pinole, CA 94564. For end users in the West County, North and/or East Bay area.

**AD-Amiga Developers Group.** Meets the last Monday of each month at 6 pm, 2618 Telegraph Ave., Berkeley, (415) 845-4814.

**AEBUG-Amiga East Bay User Group.** The Original Users Group meets the second Wednesday of each month at 2618 Telegraph Ave., Berkeley, 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

**AUGment, the Amiga User's Group of Silicon Valley.** P.O. Box 1863, Fremont, CA 94538-0186. Contact: Jim Thomas. Information line: (415) 651-1160. BBS: (415) 659-9169. Meetings every second Friday at Hewlett-Packard, 5301 Stevens Creek Blvd., Cupertino.

**Amiga Addicts Anonymous.** Meets the third Monday of each month, 7:30 pm, at 1331 Concord Ave., Concord (CCC Water District) CA. For more info, contact Jeff Chase, president, P.O. Box 4669, Walnut Creek, CA 94596. (415) 933-0217. BBS: (415) 283-5469.

**AUM-Amiga Users of Marin.** Meets the third Wednesday of each month, 7:30, at the College of Marin, Science Center, #190, Kentfield, CA. For more info, contact Bob Galvan, 119 Willow, Corte Madera, CA 94925. (415) 924-5384.

**Stockton - Modesto Amiga Users Group (SMAUG).** Meets last Wednesday of each month at 3525 Benjamin Holt Drive, Central Lounge, Willow Glen Apts., Stockton, 7:30pm. For information call Rainer Kummerle. (209) 957-8620.

### APPLE

**San Francisco Apple Core Special Interest Groups, BBS,** large public domain software library, newsletter, help network. For meeting and current events information, call (415) 771-5830. Recorded message 24 hours, live person sometimes during business hours. Leave name and address to receive information. Draconet BBS (415) 781-6645 modem line.

**The AppleWorks Users Group.** c/o TAWUG Regional Rep., 27421 Berenda Way, Hayward, CA 94544.

**SPCA (Society For The Prevention Of Cruelty To Apples)** Apple user/interest group. Features: Monthly meeting with newsletter, raffle and door prize hard / software, demonstrations, lectures, discussions, \$20 per year, pro-rated after June. Meetings last Wednesday of month, 7:30 pm. Contact Paul Meyerholtz for info (415) 490-8209.

**Association of Apple 32 Users Macintosh, Lisa.** An association of "knowledge workers" who wish to share information on products, applications, and events. User-developed, non-copyrighted software, SIGS, newsletter. P.O. Box 634, Santa Clara, CA 95052.

**San Leandro Apple Eaters Users Group.** Apple II users group meets the first Thursday of each month at San Leandro High School (room 213). New owners to experienced users welcome: Appleworks, education, hardware/software, telecommunications. Call Open Campus BBS area 11 (415-895-0135) or voice (415-782-9250) for more information.

**Pen-Apple (Peninsula Apple Users Group) Meetings** 2nd Thursday each month at 7:30 pm, Ampex Corporation cafeteria, 421 Broadway, Redwood City. Contact Pierre Testart, (415) 952-9309.

**Diablo Valley Apple Users.** Apple II family users and Macintosh users. Special Interest Groups meet monthly. Featuring a library of public domain software collection and our own Club's DOM's, monthly newsletter, group buys of hardware and software as well as monthly demos of new products. Meetings held on 1st and 3rd Friday each month at 7 pm at the Willow Creek Center, 1026 Mohr Lane in Concord. Contact Merle Zmak, president, P.O. Box 5031 Concord, CA 94524, or call (415) 672-7596 for additional information.

**South Peninsula Apple Computer Enthusiasts** (c/o David Harris, P.O. Box 1257, Palo Alto, CA 94302) meets near the Varian Credit Union, Bldg. 4C, 611 Hansen Way, Palo Alto, at 7:30 pm on the first Tuesday of every month to exchange information about available hardware, software, events, publications, and methods on Apples, and to encourage collaboration on projects. Call (415) 856-9126 answering machine takes 30-second messages.

**Roseville Apple Core.** Discover your Apple's Core! We meet on the second Wednesday and fourth Tuesday of each month, 7:00, at SMUD Foothills Bldg., Training Room D, at Don Julio and Elkhorn. There are additional SIG meetings for AppleWorks, BASIC, Telcom and Macintosh. We also feature a monthly bulletin, large public domain library, and new member's disk, all for just \$12 yearly membership. Come out and bring a friend. For more info, contact Bruce McLeod, president, P.O. Box 1377, Roseville, CA 95651. (916) 723-6422.

**Apple Sac. (Sacramento)** Meetings on first Wednesday and third Tuesday every month at Madison School, 5241 Harrison St. (corner Harrison and Madison Ave. 1/4 mile west of 180 on Madison Ave.), 7:30 pm. Contact Ray Beam, president, P.O. Box 254645, Sacramento, CA 95825, (916) 448-6115 for more information.

**Stanislaus Apple Group.** You're invited! Stanislaus Apple Group meets 2nd Tuesday each month, 7 pm, Room 124 Ag Bldg, Modesto JC, main campus. We support Apple II and compatibles, Apple III, Mac, Lisa. Newsletter, BBS (209-529-3202), extensive PD software library. More info call (209) 523-7289 (eves).

**Santa Cruz Apple User's Group** meets at Cabrillo College, Aptos, ILC building, 1:30 pm, second Sunday of the month. For information contact Tim Ruckle, president, (408) 462-3154.

**Apple Gardens.** New Apple II users group. Share info, programs, group purchases. Brand name disk, new products, software demos and evaluations. Call Tom Turley at (415) 468-4045.

**Apple P.I.E.** Meets at Lynbrook High School, Room 30, 1280 Johnson Ave., San Jose, 4th Thursdays, 7:30 pm. Contact George Ingalls, P.O. Box 2185, Santa Clara, CA 95055.

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**ATUNC-Apple Three Users of Northern California.** Explanations, demos, large public domain library. Mailing address: P.O. Box 1528, Mill Valley, CA 94942. On Apex and Draconet BBSs.

**Apple East Bay Users.** Meets the first Tuesday of each month at 2618 Telegraph Avenue, Berkeley, at 7 pm. (415) 845-4814 for information; BBS (415) 845-4812.

**Apple Pickers of Sonoma County.** Meets second Saturday of each month, 1735 Shuhaw Hall, SRJC, 1 pm. Call for sample newsletter: Mary Lou Mayes, (707) 763-8322.

**TVAUG-Tri Valley Apple User's Group.** Meets on the first Thursday of each month, 6:30 at 7079 Commerce Circle, Pleasanton, near the intersection of Hwys. 580 and 680, to discuss our Apple IIs. A special beginners group meets on the second Thursday of each month. For more info, contact Dan Balsley or Esther Farnstrom, 9814 Davona Drive, San Ramon, CA 94583. (415) 828-6237 or (415) 829-3672.

**Apple Blossom User Group.** Meets 1st and 3rd Wednesday of each month at 7 pm at 290 International Circle, San Jose CA 95119. All Apple users welcome. Apple II, II+, IIC, IIE, III and Macintosh. No matter which Apple you have we have a group for you. Contact Ray Enochs, P.O. Box 53323, San Jose CA 95153. (408) 723-9141. ABUG BBS (408) 227-3993.

**Microcomputer Users Of Santa Cruz (MUSC).** A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

## ASHTON-TATE

**Framework/Editor Bay Area Users Group (FREDBUG)** Purpose of the group is to share programming and applications techniques under FRAMEWORK for the business and technical professional. Call for info: Rudi Wiedemann, (408) 730-4159.

**San Francisco dBase User Group** For advanced users and programmers. Meets once per month. Membership required for attendance. Contact Frank A. De Coster, 1100 Gough St., San Francisco, CA 94109, (415) 474-6693.

**East Bay dBASE Users Group.** Meets 3rd Sunday, 1 pm. Call Darrell Bross (415)873-7522 or Alexandra Saur (415)893-7637 for meeting address.

**dBase II/III SIG of SF PC Users Group** meets third Monday of each month, 7-8 pm, Fort Mason, San Francisco. Contact Ron Freshman, (415) 459-6613.

**DBDVLPRS (dBaselII Program Developers).** Call for information on meeting time and location: Gil Orlik, (415) 931-0377, 2240 Buchanan St., SF 94115.

## ATARI

**ABACUS** (Atari Bay Area Computer Users Society) All ATARI users or prospective users are welcome. Membership (\$15/year) provides public domain software, low cost blank disks, monthly newsletter, group prices on hardware and software, help from experts, low cost classes for beginners. Meetings first Saturday of the month, Fort Mason, SF, Room 300, Bldg. C, 10 am-2 pm. Contact Bill Zinn, P.O. Box 1823, Mill Valley, CA 94941. (415) 753-8483.

**A.C.M.E.** (Atari Computer Marin Enthusiasts) Meets monthly in Marin, third Thursday evening monthly from 7 pm on. Gallinas School, 177 N. San Pedro Rd., San Rafael. Contact Bruce Frank, (415) 435-6020, P.O. Box 222, Tiburon, CA 94920.

**Diablo Valley Atari Computer Enthusiasts (D.A.C.E.)** Meets the first Thursday of the month at 7:00pm at the Contra Costa Water District Building conference room in Concord. Meetings free. \$20 yearly membership comes with newsletter, discounts, raffle tickets. For information contact Mike at (415) 798-6565.

**Bay Area Atari Users Group** We have a 24-hour 300/1200 baud BBS at (408) 249-7722. Meetings at Bracher School Cafeteria, corner of Bowers and Chromite, Santa Clara, CA, first Monday of the month. Contact Frank Nagle, P.O. Box 50459, Palo Alto, CA 94303, (415) 791-5461 for more info.

**San Leandro Computer Club** Although open to all computer users, this group is primarily oriented to Atari computer owners. Our club is considered one of the best in the country, worthy of consideration by both novices and experts. Meetings 1st Tuesday of the month at San Leandro Community Library, 300 Estudillo Ave., San Leandro, CA. Contact Phil Mitchell, P.O. Box 1525, San Leandro, CA 94577-0152 for more info, or call (415) 351-2208.

**COAST User Group (California Original Atari ST).** Public domain disks, MIDI, support, newsletter, help for the Atari ST line of computers. Advice and programs not to miss. Meetings on the 3rd Wednesday of each month, at The Berkeley Conference Center, 2105 Bancroft in Berkeley, CA, 7:00 pm, 6:30 for beginners. \$100 admission for non-members. EaST COAST meets 2nd Tuesday of the month at 1015 Esther Drive, Pleasant Hill, 7:30 pm. Members only. Dues \$30.00 yr. Contact Chuck Thorp, president, 1015 Esther Drive, Pleasant Hill, CA 94523, (415) 945-1949 for information.

**Redwood Atari Group (R.A.G.)** Meets 4th Saturday, 1-4 pm, at Coddington Meeting Room, 1100-B Coddington Center, Santa Rosa. Contact Mikkel Lawrence, (707)585-3949, 21 Creekwood Sq., Rohnert Park 94928.

**E.S.C.A.P.E. (Enthusiastic Santa Cruz Atari Programmers Exchange).** Full software and hardware support of both the ST and 8-bit computers. For information call (408) 688-6538 or Jim Montoya (408) 423-5190 or write, 76 Rancho Del Mar Shopping Center, Aptos, CA 95003.

## ATTACHE

**Attache UNL** Otrona may be dead, but the Attache Users News Letter Lives ON!! Contact Jim Ayers, 301 Poplar St., Mill Valley, CA 94941. (415) 388-4805. Meetings 7:30 pm, 2nd Wednesday.

**First Attache User Group News.** Support, news, and co-operation for users of Otrona Attache and 2001 portable computers. Since '82. Contact Charles Raisch, 1827 Haight St. Suite 16, San Francisco, CA 94117, (415) 221-3415.

## AUTOCAD

**AutoCAD Users Group.** Call Gen Katz (415) 530-8870 for information about future meetings.

**AutoCAD User Group.** Call Volker Ackermann, (415) 485-0958 for information.

**AutoCAD Users Group of Santa Cruz.** Meetings held at Citicorp conference room, 806 Ocean Street, Santa Cruz, 7-9 pm, 1st and 3rd Tuesday of the month. Call (408) 462-0448 for information.

## BASIS

**Bay BUG** Basis 108 Users meet every first Friday of the month at College of Alameda Computer Room, 7:30 pm. Contact Roger Bernhard, 536 Mission, San Francisco or call (415) 221-0262 for more information.

## BONDWELL

**Bondwell Users Unite!** Trying to start group, need your help. All levels welcome. Meeting address 405 Stierlin Rd. #17, Mountain View. Time and date to be announced. Call Tom Gatlin at (415) 961-0450 for more information.

## BPI

**Bay Area BPI Users Group** meets the fourth Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

## CANNON

**Cannon AS 100.** Anyone who owns a Cannon AS-100 computer and is interested in forming a group to share problems and solutions write HTF-4111 Hilltop, Vacaville, CA 95688.

## CASIO

**Casio Research Project.** Discussion and collaboration; creation of plug-in expansion board using VLSI chip. Share programs. Meetings TBA. Contact Julius M. Zebrowski, (415) 969-9458.

## COMMODORE

**San Francisco Commodore Users Group (SFCUG).** Meets the last Thursday of each month at the Embarcadero YMCA near Steuart and Howard. All Commodore computer enthusiasts welcome. PD library, classes, in-depth demonstration, eprom programmer, BBS-ET (415) 861-4485. Contact Malcolm Lowe, (415) 832-1539.

**Diablo Valley Commodore Users Group** Meetings Contra Costa Water District Auditorium, 1331 Concord Ave., Concord, CA, second Thursday of month at 7:30 pm. Write DVCUG, P.O. Box 27155, Concord, CA 94527, or call (415) 838-2838 for more info.

**Napa Valley Commodore Computer Club** Meets first and third Mondays, 7:30 pm, at Northwood Elementary School, 2214 Berk St., Napa. Take Redwood Road to Dover St. to Berk St. Contact President Dick Bull (707) 257-3773 or vice-president Roger Pruym (707) 253-1690 for more info.

**Lake County Commodore Users Group** Contact Al Reuss, P.O. Box 388, Clearlake, CA 95422.

**Marin Commodore Club** Meets at Redwood High School, Corte Madera. Visitors welcome. Contact Elmer Johnson for information: 665 Las Colindas, San Rafael, (415) 479-0426.

**Peninsula Commodore User Group** Public domain library, demonstrations, user help, newsletter. Membership is \$25 per year. Non-members pay \$2 at door. Meetings are 3rd Tuesday of each month. Meeting place is the Church of the Good Shepherd Hall, 1300 5th Ave., Belmont (across from city hall). For more info call (415) 595-5452 between 9 am and 6 pm, or call our BBS at the same number after 6 pm.

**The Commodore Connection User Group. (CCUG)** Meetings at Homestead Savings, 14th and "A" St., Antioch, 3rd Monday of the month, 7:30 pm. Contact Walt Moxely, 2229 Santa Maria Drive, Pittsburg, CA 94565. (415) 458-3318. BBS: (415) 458-1005. Commodore only, 24 hours, 300/1200.

**Commodore User's Group of Hayward.** The CUG of Hayward meets the first Saturday of each month from 3 to 5 pm at the Commodore Computer Center located at 22521 2nd St., Hayward. Call (415) 886-1916 evenings between 5 - 8 pm or (415) 537-1323 days between 10 am and 5 pm.

**NBUG (North Bay Users Group).** Contact Jim Stephens, president, 124 Delgado St., Vallejo, CA 94591, or write P.O. Box 7116, Vallejo, CA 94590.

**Santa Rosa Commodore Users Group.** Walter Saures, President, 333 East Robles Ave., Santa Rosa, CA 95407-7921. (707) 584-7009. Information line, (707) 526-6464 SRCUG-BBS.

**Family Roots Searchers.** Using Commodore SX-64 computer, Dynax DX-15, PractCalc II, Word Pro 3 Plus, Family Tree. Meetings by appointment only. Vera Ross, Atchison Village, Richmond, CA 94801-2942, (415) 235-8716.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

**Silicon Valley Commodore Computer Club.** Meets 4th Wednesdays, H.P., 5301 Stevens Creek Blvd. at Lawrence, 7 pm. Contact Roger Weiss, (408) 942-2442.

**ACCESS.** The Amiga and Commodore Computer Enthusiast Society (ACCESS) holds its meetings on the 3rd Wednesday of the month in Room 107 of the Chabot Building in Hacienda Business Park, Pleasanton, CA. Contact Skip Perkins, (415) 443-4778 for information.

**C.O.W. Commodore Owners Workshop.** Meets at the San Bruno Rec Center (in San Bruno Park) the third Thursday of every month from 7-10 pm. Machines welcome. We have a huge PD library that users can check out. We usually have demos each meeting; we have BASIC programming classes and help each other along. For further information call the San Bruno Parks and Rec at (415) 588-1201.

**Fairfield Commodore User Group.** Meetings Solano County Education Bldg., 1st and 3rd Mondays. Contact Ben Harris, 1182 Dana Dr. Fairfield 94533, (707) 422-1669.

**FUNHUG -- Fremont, Union City, Newark, Hayward Users Group.** A user organized, user operated, user group not affiliated with any computer or software manufacturer or distributor. We have a Commodore and an IBM section in our group. Group meets every third Wednesday at 7:30 at 5445 Central Ave., Suite 4, Newark.

**64/MORE, San Jose Chapter.** Meets the first Sunday of each month from 6 pm to 9 pm at Mercury Savings and Loan, 859 Blossom Hill Road, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

**64/MORE, North Valley Chapter.** Meets the second Saturday of each month from 10 am to noon at the Milpitas Public Library, 40 Milpitas Boulevard, Milpitas. For information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

**64/MORE, Cupertino Chapter.** Meets the third Saturday of each month from 3 pm to 6 pm at the Saratoga Public Library, 13650 Saratoga Avenue, Saratoga. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

**64/MORE, Campbell Chapter.** Meets the fourth Tuesday of each month from 6:30 pm to 9:30 pm at the Santa Clara County Public Health Building, 2220 Moorpark Avenue, San Jose. For further information call (408) 945-4327 or Night Owl BBS (408) 253-2295.

**Microcomputer Users Of Santa Cruz (MUSC).** A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

## COMPAQ

**SF Compaq Users Group** is now a SIG of the SF IBM PC Users Group. For information please call D. Blow at (415) 221-2764.

## COMPUPRO

**Berkeley Compupro.** Berkeley Compupro User Group meets 4th Thursday every other month. Company Reps attend meetings. For more information call Barry at (415) 554-4733.

**Hayward Compupro Users Group.** Meets 3rd Saturday of every month in Hayward, California. Sponsored by Automation Sciences International. Meetings held at 22532 Foothill Blvd., Hayward, between 'B' and 'A' Streets. You may call (voice) (415) 886-2980 or (modem) (415) 886-4734. The CP/M Connection for further information." Topics include: hardware & software problem identification and solution, upgrades, new products, CP/M, CCP/M, ZCPR and getting the most out of application software. Other users and interested parties are welcome. Group founder: Michael D. Lipshutz.

## DATAFLEX

**Dataflex User Group.** For more information call Alex at (415) 433-7944.

## DEC

**Silicon Valley DEC PC Users Group.** Meets 2nd Wednesdays 7-9 pm at Kierulff Systems 1180 Murphy Avenue, San Jose. Contact Gary Catalano (408) 275-1133.

## DYNABYTE

**Dynabyte Announcing M.A.D., Mutual Assistance, Dynabytters (Dinosaurians?)** For owners of this orphan Z80 S100 machine. Call Woody McPheeters, (415) 548-3126 or write 3128 King St., Berkeley, CA 94703.

## EAGLE

**Eagle Computer Users Group.** P.O. Box 3381, Saratoga, CA 95070, (408) 972-1965. General meetings are held on the second Saturday of the month at Tandem Computer H.R. Training Room at 10300 N. Tantau Ave., Cupertino, from 9:30 am to 12:00 noon.

**Screaming Eagles User Group** For 8 and 16 bit Eagles. Quarterly newsletter, public domain disk. On CompuServe (CLUB) Sec. 3. \$10/year individual, \$20/year business. 101 Parnassus #1, San Francisco, CA 94117. (Voice) (415) 661-4362.

**Eagle Computer Users Group -- ECUG.** Meets 2nd Mondays, 7 pm, 6132--66th Ave. (Southgate Library), Sacramento. Contact W. Jud Boies, P.O. Box 163506, Sacramento, CA 95816, (916) 443-1060.

## ENABLE

**ENABLE Users' Group.** Supporting users of Enable, the integrated software package. Monthly meetings in San Francisco (contact Evan Christensen, 415/469-1863) and Walnut Creek (contact Sandi Baker, 415/944-0426).

## EPSON

**Bay Area Epson Salts** 125 Del Centro, Millbrae, CA 94030, (415) 697-0567.

**Epson Users of San Francisco Bay Area** Epson group has nationally circulated newsletter Valnews: 400 members mostly QX-10 owners, growing software library. Meetings focus on mutual support. Mainly Valdicos and other applications. Meetings first Thursdays. 7 p.m. Fort Mason Center, Bldg. C, Room 205, San Francisco. Contact Alan Magary, 904 Irving St., Suite 271, San Francisco CA 94122, (415) 661-9270.

**Napa Valley Epson Users Group** 1307 Hestia Way, Napa, CA 94558, (707) 253-8727.

## FORTH

**FORTH Interest Group, Berkeley Chapter.** Meets 2nd Saturday of the month at 1 pm, 10 Evans Hall, UC Berkeley. Contact Mike Perry, (415) 644-3421.

**FORTH Interest Group, Monterey/Salinas Chapter.** Contact Bud Devins, (408) 633-3253.

**FORTH Interest Group, Sacramento Chapter.** Meets 2nd Tuesday of the month, 7 pm, 170B 59th St., Room C. Contact Tom Ghormley (916) 444-7775.

**FORTH Interest Group, Bay Area Chapter.** Meets 4th Saturday of the month, 10 am advanced, 1 pm beginning, at ABC Christian School Auditorium, Dartmouth and San Carlos Ave., San Carlos (408) 277-0668.

**FORTH Interest Group, Stockton chapter.** Contact Doug Dillon (209) 931-2448.

## GAVILAN

**Gavilan User Group.** Meets 2nd Thursday, 7 pm, Lockheed Bldg 162. Sunnyvale, CA. Contact R.W. Brown, 780 Manx Ave., Campbell, CA, (408) 379-2774. Gavilan BBS (408) 374-3974, 300/1200, 24 hours, free.

## HEATHKIT

**San Jose Heathkit Users Group.** Meets first Wednesday at 7 pm at the Heathkit store on South Bascom Ave. in Campbell.

**B.A.H.U.G. Bay Area Heath Users.** Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm, 2nd Tuesday of each month.

**NBHZUG North Bay Heath/Zenith Users Group.** Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

## HEWLETT-PACKARD

**Bay CHHU, HP Laptop & Handhelds.** Meets 2nd Saturday of the month. Contact Jim Horn (707) 523-4890 or Michael Feinstein (415) 564-8279.

**INTEREX** is the International Association of Hewlett-Packard Computer Users, with affiliated users worldwide approaching 10,000. Acting as an information resource for users of HP computers (HP3000, 1000, 900 and Series 100), INTEREX maintains libraries of user contributed software. The software is available through the CSL membership categories. INTEREX has three publications, one or two for each of the categories. Phone (408) 738-4848 or write User Services Department, 680 Almanor Ave., Sunnyvale, CA 94086.

## IBM

**South County PC Users Group** Meetings held second Thursday of each month at St. Clements School Library, 730 Calhoun St., Hayward. Public Domain and shareware disks, newsletter. Contact Bob McCloud (415) 537-9899.

**Silicon Valley Computer Society.** New users SIG, 7:30 pm, 2nd Wednesday at Hewlett-Packard Co., Bldg. 50, 5301 Stevens Creek Blvd.; call Dick Meyer, (408) 723-0159. dBASE III SIG, 7:30 pm, 4th Thursday; call Thaine and Barbara Anderson, (415) 345-0152. WordPerfect SIG 7:30 pm, date variable; call Martin Van Derpool, (408) 238-8434. Software tools and graphics SIG, 7:30 pm, 4th Tuesdays; call Hal Sampson, (408) 866-7833. Artificial Intelligence SIG, 7:30 pm, 2nd Thursdays; call Kent Byron, (415) 656-0410. Telecom SIG, 7:30 pm, 1st Monday; call Scott Sawicki, (408) 243-8781. Lotus 1-2-3/Symphony SIG, 7:30 pm, 3rd Thursday; call Bill Welch, (408) 247-3405. C programming SIG, 7 pm, 3rd Tuesday; call Fletcher Johnson, (408) 946-0960.

**California PC LAN Users Group,** 1625 The Alameda, Suite 511, San Jose, CA 95126. (408) 289-1711.

**Diablo Valley PC.** An IBM PC User Group, monthly meetings, newsletter and public domain software library. Contact Jim McDonnel, president, 2261 North Main St. 117, Walnut Creek, CA 94596, (415) 933-1270.

**The Bay Area Computer Society** Emphasis on IBM PCs, networking and multi-user systems. P.O. Box 20583, Oakland, CA 94604, (415) 839-5786.



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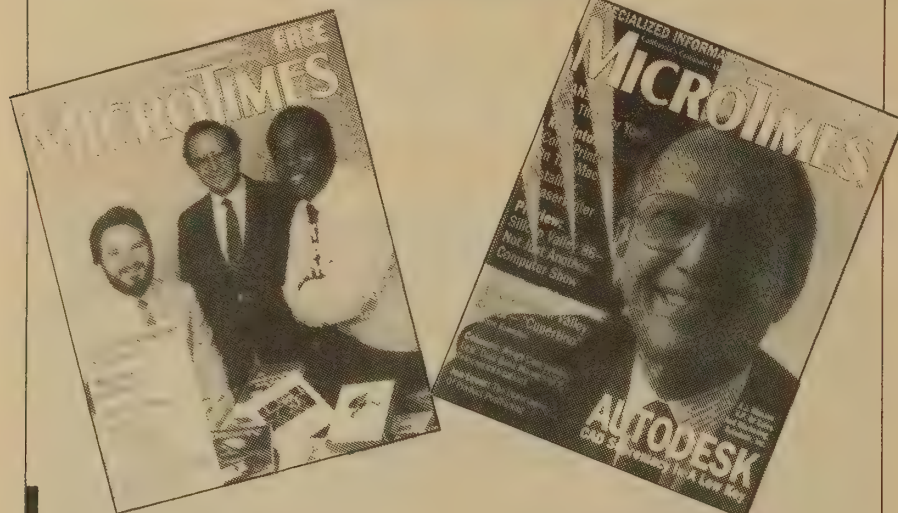
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**IBM PC Users Group of the Redwoods.** Anyone interested in PCs and/or compatibles is welcome. Meetings at Yulupa School, 2250 Mesquite Dr., Santa Rosa, CA, 4th Thursday of the month, 7 pm. Contact Michael Adams, P.O. Box 5055, Santa Rosa, CA 95402, (707) 664-8320, (707) 546-3619.

**Sacramento PC Users Group.** Over 1000 members. Meetings at Holiday Inn Holiday, 5321 Date Ave., 7 pm, 3rd Wednesday. Contact Barney McCauley, P.O. Box 685, Citrus Heights, CA 95610, (916) 484-1048, or call the club number (916) 332-1944.

**SF PC Jr User Group** meets monthly. Lectures and discussions on the usage of IBM PC Jr software and hardware. Software and books library. For more information please send SASE to 2336 Market St., Suite 20, San Francisco, CA 94114. Meetings at 1550 Bay St., SF, every first Sunday at 7:30 pm.

**San Francisco PC Users Group.** Largest SF group focusing on IBM and compatibles. Over 150 disks of public domain software, excellent monthly newsletter. 800+ members, \$30 yr. Write 3145 Geary Box 155, San Francisco, CA 94118. Meetings 8 pm, 3rd Mondays, Bldg A Fort Mason.

**Monterey Bay PCjr Users Group.** Meets at Legacy Computers, 431 Tyler, Monterey, CA 93940. Usually meets second Thursday of the month. Contact Lloyd Reece, (408) 899-5795. Mail to Box 1191, Seaside, CA 93955.

**Valley PC Users Group.** Individuals and corporate users of the IBM PC and compatibles; guest speakers from major vendors, public domain software, exchange problems and solutions. BBS 24 hours (209) 952-5021. Meeting address 731 Brookside Road, UOP School of Pharmacy, Rotunda Bldg., Stockton, 7 pm, 1st Tuesday. Contact Francis Pillow, P.O. Box 77748, Stockton, CA 95207, (209) 478-9697.

**FUNHUG PC—Fremont, Union City, Newark, Hayward User Group.** For recreational/home users of IBM PC and compatibles. We meet on the third Wednesday of each month at the Fremont Main Library, 39770 Paseo Padre, Fremont, CA at 7:30 pm. We have software/hardware demonstrations and visits from manufacturers. Our library contains over 350 disks of public domain software. There are no dues, beginners are always welcome. For more info and map send SASE to Russ Fisher, 36015 Pizarro Dr., Fremont, CA 94536.

**Marin-Sonoma PC Users Group.** Meets last Tuesday of the month, 7:30 pm, in the Whistlestop building, 930 Tamalpais St., San Rafael, CA. Park in Savings and Loan parking lot across the street. Classes, SIGs, 24 hour BBS at 415/927-1216. Emphasis on business applications and solutions. For additional information contact John Hawkins (415) 525-8500, P.O. Box 6476, San Rafael, CA 94903.

**Santa Cruz Computer Society.** An IBM PC and compatible for beginning to advanced users, programmers and decision makers. Meetings 3rd Thursday, 7 pm, 1555 Soquel Dr., Santa Cruz (Dominican Education Center). Call Daniel Payne, (408) 476-0203.

**San Francisco Computer Society,** a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

**IBM Compatible User Group of Silicon Valley.** Meets monthly to share information about IBM compatible or clone computers. BBS (408) 287-8326, 300/1200, 5:30 pm-7:30 am M-F, 24 hours weekends. Call (408) 287-8325 for information, or write to 1515 The Alameda, Suite 303, San Jose, CA 95126.

**Microcomputer Users Of Santa Cruz (MUSC).** A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

**Berkeley P.C. Users Group.** Meets on the 2nd Monday of each month, 7:00 pm, at 2618 Telegraph Avenue, Berkeley. For more info, contact Mel Mann, 1145 Walnut Street, Berkeley, CA 94707, (415) 527-2177 or Andy Wong, 2618 Telegraph Ave., Berkeley, CA (415) 845-4814.

**IBM AT/XT Clone Users Group.** Meets 2nd Monday of every month at Bldg. 'C' (usually room 215) Fort Mason Center in San Francisco. \$25 annual membership includes newsletter. Group focuses on clone hardware and support. P.O. Box 15000/324, San Francisco, CA 94115. Voice: (415) 861-9321. BBS: (415) 552-9070.

**Mid-Peninsula IBM PC Club.** For IBM employees only. Contact George Halle (415) 855-3474 or Scott Maiden (415) 855-3038.

**SACTO PCjr Group.** Meets on the 4th Tuesday of each month at SMUD Bldg., 59th and Folsom Blvd., Sacramento, at 7:15pm.

**CADVANTAGE - Cadvance Users Group.** Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/22/87, 10/21/87, 1/20/88, 7:00pm to 10:00pm. PC CADD for architectural/facility designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

**BAYPUG-Bay Area P-CAD Users Group.** Meets P-CAD 1290 Parkmoor, San Jose. 7/30/87, 10/29/87, 1/28/88, 9:00am to 1:00pm. PC CADD for PCB/CAE Designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

**The Blacksmiths-ANVIL 1000 MD Users.** Meets at Mitchell Park Community Center, 300 Middlefield Road, Palo Alto. 7/15/87, 10/14/87, 1/13/88, 7:00pm to 10:00pm. PC CADD for Mechanical Drafting and Engineering designers. Current users and/or those contemplating CADD are welcome. Meetings take place once every quarter.

**Stanford/Palo Alto PC Users Group.** Meets last Wednesday of the month at 8:00 pm, Polya Hall, Turing Auditorium (Room 111), Stanford.

## KAYPRO

**BAKUP (Bay Area Kaypro Users and Programmers).** One of largest Kaypro user groups in country. Meet 3rd Tuesday of month, 7:30 pm. We support our RBBS/RCPM for members, publish a monthly newsletter, have a 40 volume software library, and a lot of fellow KP'ers! Write for info, \$10 per year to join: Membership Coordinator, P.O. Box 20181, Oakland, CA 94620.

**KAYFUN Peninsula Kaypro Users Group** meets second Thursday of every month at 7:30 pm in the ground floor social room, 222 Laurel St., San Carlos. Bimonthly newsletter, public domain software library, and publication library. Membership \$12 per year. Every third meeting a Free Forum night dedicated to individual help. Contact Larry Welling, 222 Laurel St. #310, San Carlos, CA 94070, (415) 593-9981.

**South Bay Kaypro Users Group (SBKUG).** Meetings at 10400 Torre Ave., Cupertino. We have an extensive library of public domain software, including over 200 diskettes of the

SIG/M library. The floor is open for questions at each meeting, and we welcome new members at all levels of ability. Bring your machine, or at least your diskettes. For meeting night call Chuck Hansen at (408) 257-5244, or write P.O. Box 390088, Mountain View, CA 94039-0088.

**HAYPROS. Kaypro User's Group**—informal format, dealer supported. Meets at Computer Insights, 40957 Grimmer Blvd., Fremont, CA 94538, 1st Tuesday each month. Contact Ted de Castro, 18841 Vineyard Rd., Castro Valley, CA, (415) 581-8882.

**Microcomputer Users Of Santa Cruz (MUSC).** A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Bricmont, 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

**San Francisco Computer Society,** a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

**Silicon Valley FOG.** Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

## LEADING EDGE

**Bay Area Leading Edge User Group.** Interested in starting a Leading Edge User Group? Write to Jim Williams, 26765 Calaroga Ave., Hayward, CA 94545.

## MACINTOSH

**EBMUG (East Bay Macintosh User's Group)** Friendly, informal. Public domain software and computer book library. Information exchange. Speakers. Product discounts. Free admission. Meets at West Berkeley Public Library, 1125 University Ave., Berkeley, CA, third Tuesday of each month at 7:30 pm. Contact Shep Tamler at P.O. Box 7816, Berkeley, CA 94707-0816.

**Bay Area MacForum** New and experienced Macintosh users. 2 monthly meetings, one in conjunction with San Francisco Apple Core, and one in Concord. For meeting and current events information call (415) 771-5830. Recorded message 24-hours, live person sometimes during business hours. Leave name and address to receive information.

**Berkeley Macintosh User Group (BMUG).** 1442A Walnut St., #62, Berkeley, CA 94709. General meetings: every Thursday 6 pm, Physical Sciences Lecture Hall on UCB campus. SIG meetings on Mondays, Tuesdays and Wednesdays. Call for more info and this week's topic. (415) 849-9114. BBS (415) 849-BMUG.

**MacNexus. Sacramento's Macintosh User Group.** 150 members, but still informal. Extensive public domain collection. Contact Gail McGovern, P.O. Box 163058, Sacramento, CA 95816, (916) 446-2411. Meetings 3rd Thursdays, 6:30 pm, Almond Plaza, 17th & C, Sacramento.

**MacProgram Unlimited.** Meets monthly. Informal with hands-on testing of different programs. Public domain and standard programs in rental library. Meets Albany YWCA, Kains and Solano, Saturday 9:30 am. Contact William Gong, P.O. Box 7704, Berkeley, CA 94707. (415) 527-1756.



**Stanford Macintosh Users Group (SMUG)** meets on the first Monday of the month at 7 pm in Kresge Auditorium, Stanford Campus. Meetings include speakers, discussions, answers and sale of library disks and other SMUG items. The Excel, Novice, Developer's, Japanese Word Processing Groups each meet twice monthly. SMUG publishes a newsletter and runs a BBS. Call the SMUG hotline at (415) 723-SMUG for a listing of current events. Stanford Macintosh Users Group, P.O. Box 2354, Stanford, CA 94305-0135.

**Club Mac of Monterey.** Macintosh User Group of Monterey Bay Area. Membership with monthly newsletter \$25. Meetings 7 pm, last Wednesday of the month, Santa Catalina School, Monterey. Contact Richard Ware, P.O. Box 222988, Carmel, CA 93922.

**Macs Of Marin.** Macintosh users of Marin County. Both beginning and experienced users are welcome. Meetings: Room 104, Austin Science Building, College of Marin, 2nd Thursday of each month, 7:00 pm. Contact Steve Salzman, (415) 459-5707.

**maCruzers,** a Macintosh user's group, meets every second Wednesday of the month at Loudon Nelson Recreation Center in Santa Cruz, 7 pm. For information call (408) 459-1644, or leave mail on The WELL (415-332-6106) for Paul Foraker [sforaker]. Wood Ring BBS (408) 423-7205, 18 hrs/day, several megabytes of shareware/pd utilities and games; making the effort to have the latest version of important DAs and utilities.

**Association of Apple 32 Users.** Meetings at GTE in Mountain View, 2nd Saturday of the month. Contact Ken Silverman, P.O. Box 634, Santa Clara, CA 95052, (408) 263-0398.

**BAMMSBUA: (San Francisco) Bay Area Mac M.S. Basic Users Anonymous.** A high-level users group devoted to the Microsoft dialect of BASIC for the Macintosh. Meets the second Tuesday of each month. For more information contact Ted Jones (415) 826-9239.

**Mac Health User Group.** For DentalMac, Medimac and Chirromac users, and interested others. To discuss ways to better use these billing and accounts receivable programs and the Macintosh in health-care practice. Meets at various times and locations. For more info, contact Robin Guess, 896 24th Avenue, San Francisco, CA 94121, (415) 387-3042.

**Hellmans Open House.** Meets every Tuesday 7 pm at 814 "E" St. San Rafael. Macintosh Network Games, Mazeware and Net-Trek. Bring your Mac and Appletalk cables if you have them. For more info call (415) 453-7924.

**Silicon Valley Christian Mac Users Group.** Meets 1st Thursday of each month at 7 pm at various locations. All Bay Area Christian Mac users invited. Informal, just getting started, monthly newsletter and hot lines. Contact Rick Thrasher 2190 Bristolwood Ln., San Jose, CA 95132. (408) 945-4946.

**MICROMATE**  
**East Bay Micro-Mate Users' Group.** CP/M (3.0) public domain software available. Meetings at 757 Longridge Rd., Oakland, 1st Thursday of each month. Contact Ed Miller, P.O.B. 402, Moraga, CA, 94556, or call (415) 376-1611 for info.

**MICROPRO**  
**Wordstar Users.** Forming user group for Wordstar users. Please write to P.O. Box 1331, Menlo Park, CA 94025 or call (415) 325-4277.

**MIDI**  
**MIDI Applications Group.** Meets first Saturdays of the month. Contact John Komlenic, 1411 10th Ave., Oakland, CA 94606, (415) 465-6216.

**MORROW**  
**BAMDU (Bay Area Micro Decision Users Association).** Meets on last Tuesday of the month, 7:30 pm. Call (415)

644-2805 for location. Monthly newsletter.

**SMUG (Stanford Morrow Users Group).** Meets 2nd Wednesday of each month at 7 pm on Stanford Campus, Shultz Auditorium, Health Research and Policy building, Campus and Lomita Drive. Other CP/M users welcome. For further information call Ross E. Voyles, (408) 243-1455.

**Microcomputer Users Of Santa Cruz (MUSC).** A FOG affiliate, membership open to all persons interested in MS-DOS or CP/M computers. Meetings the second Tuesday of each month. Wheelchair access. Guest speakers, demonstrations, MS-DOS and CP/M software libraries. Info: Barney Brimont. 1920 Maciel Avenue, Santa Cruz, CA 94062. (408) 476-0504.

**PETMUG — Petaluma Morrow Users Group.** Meets West-america Bank, Washington Square, Petaluma, 7:30 pm, 4th Thursday of the month. Contact Frank Nance, president, 293 Circulo Puebla, Rohnert Park, CA, (707) 585-2980.

**San Francisco Computer Society,** a CP/M and MS-DOS user group, meets on the first Monday of each month, 7:00 pm, at Homestead Savings, 5757 Geary Blvd., San Francisco. Membership is free, meetings are free and open to members and non-members. Member of FOG. For more information call Ralph Gallagher at (415) 929-0252.

**Silicon Valley FOG.** Supporting all types of CP/M micros. Two meetings monthly, one at the Campbell Public Library, 70 North Central Ave., Campbell, and the other at the Saratoga Community Library, 13650 Saratoga Ave., on the southeast corner of Saratoga and Fruitvale Avenues, Saratoga. Call (408) 371-8699 for further information.

**NEC**  
**Bay Area NEC/100 Users.** For NEC 8201A and TRS-80 Model 100. 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

**NORTHSTAR**  
**INSUA** Largest North Star users group in the world. Members' newsletter and software library. Membership dues \$20. Contact George Riddle, P.O. Box 2910, Fairfield, CA 94533.

**OSBORNE**  
**East Bay FOG (First Osborne Group)** Osborne, Kaypro and Morrow. Meets second Wednesday of the month at B&B Electric, 2832 Ford Street, Oakland. 6 pm workshops, 7:30 pm program. For info contact 5497 Taft Ave., Oakland, CA 94518; phone (415) 272-9099.

**SMOG3 Osborne User Group (Peninsula)** Meets first and second Monday of every month at Crane Place, 1331 Crane, Menlo Park. Call Phil Moore at (415) 325-2442.

**MTDOG (Mt. Diablo Chapter-First Osborne Group)** Meetings 7 pm, 3rd Wednesday each month in Diablo Room (top floor), SF Federal Savings and Loan, 1660 Olympic Blvd. (cross-street: California), Walnut Creek. Software library, software / hardware / service demonstrations, sharing problems and solutions. For meeting info contact Larry Sydes, (415) 933-2665.

**North Bay First Osborne Group.** Meets first Thursday of the month at 7:30 pm, Valley Oaks Apts. Rec. Hall, 2600 Northcoast St., Santa Rosa, CA (off West Steele Lane). Call (707) 546-0145 for more information.



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### PAPERBACK SOFTWARE

**V-P Planner Special Interest Group.** Meets 2830 Ninth St., Berkeley, CA, every third Thursday, 7:30 pm. Contact Lloyd W. Bracewell, 6200 Harwood Ave., Oakland, CA 94618, (415) 547-8205.

### PICK

**Northern California Pick Users.** NCPU mails a monthly newsletter, meets on the third Tuesday of the month for a dinner meeting with Pick related program, holds Pick educational courses, and has many other member benefits. P.O. Box 884474, San Francisco, CA 94188-4474, (415) 284-4063.

### PIED PIPER

**Pied Piper Users Group** Owners of Pied Piper CP/M based computer are invited to call or attend the PPUG. Meets last Tuesday of the month at 7:30 pm. Please call (415) 638-1146. Meeting address: 10950 Elvessa St., Oakland 94605.

### PROLOG

**Prolog.** A SIG-Prolog is being formed. Interested? Call Jorge (415) 969-5045 or Dave (415) 368-8450 (evenings).

### R2E

**North Bay R2E** Forming user group for R2E System micro-computer users. Please call (415) 235-1598 for information.

### RADIO SHACK TRS

**TRS-80 Computer Society of Diablo Valley** The purpose of this group is the sharing of information, problem solving, support group, purchasing discounts, support for professional, business and educational users of Radio Shack computers. Out-of-area members welcome. Meetings second Tuesdays of the month, Willow Creek Center, 1026 Mohr Lane, Concord, 7:30-9:30 pm. Doors open at 7. Contact Roy or Sue Copeland, P.O. Box 23438, Pleasant Hill, CA 94523, (415) 372-7003.

**TRS Nybbliers.** All Tandy computers including MS-DOS (IBM Compatibles). SIG's include laptops, CoCo's, Mod 1,3,4, Mod 2, 12, 16, 6000 and MS-DOS. Access to a variety of Public Domain software. Education modules, "problem solving" peripheral committee. Meets at Chabot College (Rooms 600 & 1564) 2nd Friday, 8 pm. Write TRS-Nybbliers, Chabot College, 25555 Hesperian Blvd., Hayward, CA 94545. Attn Mel Edwards. Call B.B. Jarvis (415) 846-3575.

**Bay Area Chapter of the California Computer Federation,** a user group for Color Computer users formed by The Redwood Color Board. Write the R.C.B., P.O. Box 7007, Redwood City, CA 94063 for details.

**South Bay TRS 80 Users Group (SBUG).** For info write P.O. Box 60116, Sunnyvale, CA 94088 or call Don Rhodes at (408) 996-1008. BBS: (408) 253-6293. Meetings, Cupertino library, 3rd Tues., 7:15 pm.

**San Mateo TRS-80 Users Group.** Meets 4th Thursday of the month at Cal Fed S&L, 2600 Ocean Ave., SF, 7:30 pm. BBS (415) 574-7684, 300/1200, 8-N-1 settings. Contact Julian Kaufman, (415) 992-1783.

**Bay Area NEC/100 Users.** For NEC 8201A and TRS-80 Model 100. Meets 1st and 3rd Thursdays, 7:30 pm. Contact Rachel Holmen, c/o Truly Portable, Box 2916, Oakland, CA 94609, (415) 658-1889. Call for location.

**Byte Bandits of America.** Meets 2nd Saturdays 1 pm, 4th Wednesday 7 pm, 780 Manx Ave., Campbell, CA. Call Robert W. Brown, (408) 379-2774 for information. BBS: 300/1200, 24 hrs., free, (408) 374-3974.

**Club 100.** A Model 100 users Group. Dedicated to Model 100, 103, 200, NEC 8201A and Olivetti M10 users. Contact Richard Hanson, club secretary, P.O. Box 23438, Pleasant Hill, CA 94523, or call our club BBS at (415) 939-1246. We are a very active, on-line club with many helpful members, and a large Model 100 public domain library available to members.

**United Computer Federation: San Francisco Chapter.** Meets the fourth Tuesday of each month at the Foster City Fashion Island Mall community room. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy color Computer user groups. For more information phone Brad Ryan, Chapter Vice President, at (415) 469-3172.

### REALWORLD

**Bay Area REALWORLD Users Group** meets the third Tuesday of each month. For more information contact Mitch Paioff, 5097 Tisdale Way, San Jose, CA 95130, (408) 866-4310.

### ROYAL

**Royal Alphantronic, San Francisco.** New group forming. Call Tom Rutkowski at (415) 863-4794 for information or write P.O. Box 421161, San Francisco, CA 94142.

### S-100

**S-100 Bus Users Group.** Meets fourth Tuesdays, 7:30 pm, Community Room, El Paseo de Saratoga, San Jose. Contact Dick Delp, Box 10404, San Jose, CA 95157, (408) 245-2137. CP/M-80, S-100 emphasis. CP/M and MS-DOS libraries.

### SANYO

**Sanyo MBC 1100-1150** user group now forming in Oakland. Call or write (415) 534-1981, 5885 Bancroft Ave., Oakland 94605 for meeting time and location.

**Sanyo National Users Group.** SNUG is a central resource for Sanyo information and public domain. Inquiries welcome! Contact John Egan, 101 Irving Ct., Pleasant Hill, (415) 827-3023.

**Sanyo PC Compatible Club.** SPCCC supports Sanyo 16 bit machines and similar PC clones. We publish the Sanyo PC Hackers Newsletter (International), subscription rate \$20/yr., and maintain a public domain software library. Meeting at the Mercury Room of Mercury Savings & Loan, 99 El Camino Real, Menlo Park, CA, 7-9 pm the first Wednesday of the month. Contact Victor R. Frank, 12450 Skyline Blvd., Woodside, CA 94602, (415) 851-7031.

### SOUTHERN PACIFIC

**ICOLATUG.** User group for owners of Southern Pacific Ltd's Mountainside ICO and LAT single board computers. Exchange tips and programs. Contact Andrew P. Porter, 774 Joyce St., Livermore, CA 94550.

### TEXAS INSTRUMENTS

**San Francisco 99ers** One General Meeting per month plus uncountable mini-meetings for training. Over 500 programs



available in library. Meetings 12 noon, third Saturday of the month, 3751 Elston Way, Oakland. Contact Gary L. Anderson, 24816 Mango St., Hayward, CA 94545, (415) 786-1776.

**South Bay T.I. User Group.** One general meeting per month. We have training session, library and own bulletin board (408) 578-6264. Meets first Thursday of each month at 7:00 pm, Cupertino Library, 10400 Torre Ave., Cupertino, (between DeAnza Blvd. and Rodriguez Ave.) starting at 7 pm in the basement conference room. Call v.p. Keith Felix, (408) 258-6678.

**Nor-Cal TI 99/4A Users Group.** Learn more about your Texas Instruments 99/4A computer. Free software, sources of hardware and software. Contact Dave Steady, 324 Howard St., Petaluma 94952, (707) 762-6561. Meetings at Retail Clerks' Union Hall, 382 Tesconi Ct., Santa Rosa, CA, first Wednesday of the month at 7 pm.

**Santa Clara Valley TI Pro User Group.** Meetings 7 pm, 4th Thursdays, location varies. Contact Tom Schoen, PO Box 871, Newark, CA 94560, (415) 793-6670.

**THEOS/OASIS**  
**Theos/Oasis Users Bay Area Group.** Greater SF Bay Area users of THEOS and OASIS multi-user operating systems meet quarterly to focus on "hot" issues and share info. Contact Joe Trimble, 236 Frisbie St., Oakland, CA 94611, (415) 839-3281.

**TIMEX SINCLAIR**  
**East Bay Timex/Sinclair User Group (EBZUG)** Timex/Sinclair user group. S/W library and newsletter. Usually meets 4th Thursday of the month at 7:30 pm, CALL FIRST FOR EXACT TIME AND PLACE. Contact Russ English, 415/465-3116 or write to Woody McPheeters at 3128 King St., Berkeley, CA 94703.

**Timex/Sinclair Users of Silicon Valley (GUTS/SV)** c/o Bill Miller, 6675 Clifford Drive, Cupertino, CA 95014-4530. 253-3175. SW library and newsletter. Meets every Saturday morning at 9:00 am at Stanford University, Jordan Hall (in the quadrangle), Math Building (number 380) in room 380C (downstairs). For topic check the PDSE (Public Domain Software Exchange) BBS in Sunnyvale at (408) 735-7390, 300/1200, 8-N-1, 24-hours, 32 lines (no waiting!).

**Silicon Valley Timex/Sinclair User Group (SVTSUG)** Timex/Sinclair user group: 6675 Clifford Drive, Cupertino, CA 95014-4530. Bill Miller (408) 253-3175. SW library and newsletter. Meets at Cupertino Library, 10400 Torre Ave., Cupertino, CA, last Tuesday of the month.

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## VECTOR

**Bay Area Vector Group Meeting** held regularly. Please call to be put on mailing list. You will be informed of next meeting! Contact Peter Tjeerdsma, 764 Cole St. #4, San Francisco, CA 94117. Phone (415) 681-0308.

## VICTOR

**Victor\* Group** is the San Francisco Bay Area Victor User's Group. We have three chapters East Bay, South Bay, and San Francisco. Members can attend meetings at any of the chapters or all of them. The more the merrier. Dues are \$30 a year, which includes a subscription to VictorTalk, membership in a Victor-exclusive discount buying cooperative, and the right to buy from our public domain library at a discount. South Bay meetings are held the first Thursday of each month at Computer Insights, 40957 Grimmer Blvd., Fremont at 7:30 pm. Contact John Kimber (415) 797-6423. East Bay meetings are held the second Wednesday of the month at 7:30 pm; contact Boardman Moore (415) 283-3285 for location and further info. San Francisco meetings are held the third Sunday of the month at 5 pm at Homestead Savings, 130 West Portal, San Francisco. Contact Joe Zmuda, (415) 584-4048.

## VTC-1050

**VTC-1050 User's Group.** Establishing a VTC-1050 User's group and newsletter. Interested parties please call or write Ken Phillips, 4349 Blackford Ave. #1, San Jose, CA 95129, (408) 973-1353.

## WORD PERFECT

**Word Perfect of Santa Cruz.** Now a SIG of Santa Cruz Computer Society. Telephone network, meetings occasionally as needed. 2120-87 N. Pacific, Santa Cruz, CA 95960-2743. Contact Sylvia Caras, (408) 426-7636.

**South Bay Word Perfect User Group.** Call Martin Van Derpool, (408)238-8434 for information.

## ZENITH

**Zenith User Group of San Francisco.** Zenith users are forming a user group and bulletin board for Zenith computers. Hands on demonstrations will be provided on the full line of Zenith hardware. Meetings at 1325 Howard St., SF, CA. Contact Stan Kelley, 415-861-3068.

**B.A.H.U.G.** Bay Area Heath Users. Heath/Zenith computers, ZDOS, PC-DOS, CP/M and MS-DOS. Meetings at 2001 Middlefield Rd., Redwood City, CA, 7 pm second Tuesday of each month.

**NBHZUG North Bay Heath/Zenith Users Group.** Devoted to Heath/Zenith computers in specific and MS-DOS, CP/M computers in general. Beginners and advanced. Meeting place varies, time 2nd Saturday, noon. Contact Martin Schaaf, (415) 454-6761 for information.

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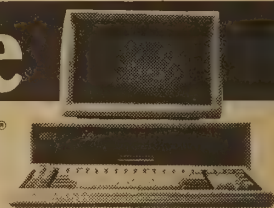
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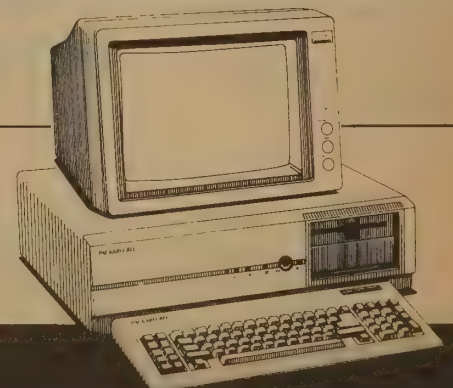
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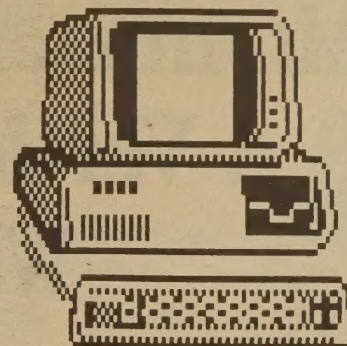
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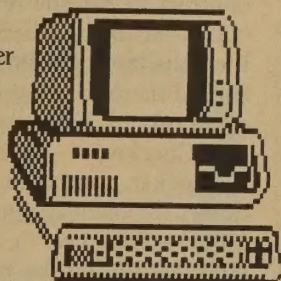


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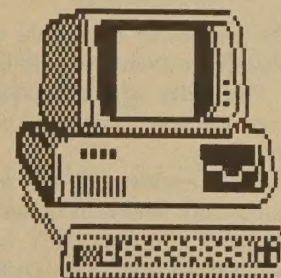
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## Momma, Momma, I Want To Be A Vertical Market Specialist When I Grow Up

By John C. Dvorak

**O**ver the years I've had more than a few friends tell me about the gold in them thar hills. The Hills are those fancy vertical markets where millions are to be made. Easy pickin's, they all say.

Over the years I've noticed that no mountain of gold has been found. The hills contain no gold, no silver, no quick and easy buck. No nothing. The idea of selling vertical market software stems from the idea that the vertical market is starved for software. And people who get into the vertical markets *do* seem to make a good living — for awhile.

What's a good example of a vertical market product? In Berkeley you can go to Front Row Video and see a nifty vertical market application that consists of a PC hooked to a network, running specialized application software to make the store efficiently check video tapes in and out using bar codes. That's a vertical market application. It amuses me how the place has all this computer paraphernalia and still turns out to be the most expensive rental place in the area. I guess someone has to pay for the computers.

My take on vertical marketing is simple. It's boring. Who cares about selling a specialized general ledger and inventory package into, say, kid's shoe stores? What a life.

The classic vertical market story is in a business that historically parallels and predates the computer industry — the automobile industry. We study it and we see our future.

The most obvious vertical market for the automobile manufacturers is the big city cab. The ver-

---

**My take on vertical marketing is simple. It's boring. Who cares about selling a specialized general ledger and inventory package into, say, kid's shoe stores? What a life.**

---

tical market specialist is the Checker Motor Co. in Kalamazoo, Michigan.

Checker has its roots in a 1908 two-cylinder high wheeler called the "Seven Little Buffalos," produced by a hacker named William A. Schaum. It seemed like this car was reliable enough to keep Schaum in business and evolve his little company into the De Schaum Motor Car Co., then into the De Schaum-Hornell Motor Car Co., then the Suburban Motor Car Co. to the Palmer Motor Car Company to the Partin-Palmer Motor Car

---

**In Berkeley you can go to Front Row Video and see a PC hooked to a network, running specialized application software to make the store efficiently check video tapes in and out using bar codes. That's a vertical market application. It amuses me how the place has all this computer paraphernalia and still turns out to be the most expensive rental place in the area. I guess someone has to pay for the computers.**

---

Company and, finally, to the Commonwealth Motor Car Company in 1919. And you think the computer business is nuts.

Meanwhile the taxi industry was merging like there was no tomorrow. Checker Taxi of Chicago was one of the biggest. They needed a more rugged cab and went to Commonwealth with a request for a special car made just to be a toughened taxi. Soon Commonwealth became a specialist in making cabs. It renamed itself into the Checker Cab Manufacturing Co.

The vertical market paid off. In 1924, Checker made 4000 cabs. A big deal in those days. To make itself more entrenched in the vertical market, it bought Checker Cab Sales Corp. in New York and cornered the market for cabs in that city. By 1928, redesign and constant improvement resulted in the famous Checker model "K." Equipped with shatterproof glass and hydraulic brakes, the car was considered by experts at the time as the greatest car ever built. It sold for \$2500.

By now Checker not only made cabs, but owned cab companies throughout the country. In 1930 the Checker Cab was appointed with down-filled cushions, and the cabs were as stylish as the finest limousine.

Checker even made money in the Depression

when no other car maker could do it. The lure of the profits to be made in this vertical market suckered General Motors to make a do-or-die attempt to gain a foothold by introducing a taxi from its General Cab division. They offered them to all comers in New York for \$360 down and no contract to pay the remainder. This sleazy trick backfired, as the sharp New York cabbies bought the cabs, then ran them into the ground and returned them to GM with tires worn bald and engines ruined. They took their easy profits to buy a new Checker.

Checker continued to dominate the cab industry for years. As the economy changed and the 1979 recession set in, all of a sudden some bean-counters pulled the plug. The last Checker Cab rolled off the assembly line on July 12, 1982.

The business fluctuated too much. Ford, GM and Chrysler sold cheaper stripped-down versions into the market. Ralph Nader even attacked Checker. I think the fact that the Checker drove for years and years was one possible reason for its demise. Not enough turnover. New York cabbies, though, differ on this issue. Many say the last few were very shoddy and the transmissions in particular weren't very good. Whatever the case, the Checker you see (which was originally designed

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**The classic vertical market story is in a business that historically parallels and predates the computer industry — the automobile industry. We study it and we see our future. The vertical market specialist is the Checker Motor Co. in Kalamazoo, Michigan.**

---

in 1956 and resembles other car models of that year, specifically a Buick) is the last of a legend. Enjoy every ride you can. There are a very few Checkers left in New York. A few more can be found in Chicago.

Think of it as riding in a vertical market product. Then look over in the next lane at the Chevy Caprice. There goes another Chevy. And another! So much for vertical marketing as an emphasis. Perhaps it should only be seen as a sideline. That's where it's at. A sideline. □



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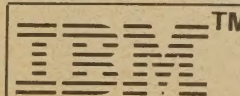
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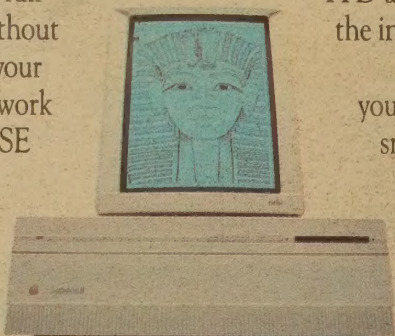


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